Dates in **bold** apply to all schools, on all University campuses. Those not in bold apply only to the Pittsburgh Campus. Official dates for degrees awarded apply to all schools, on all University campuses. Specific dates affecting the professional programs in the Schools of Dental Medicine, Law, Medicine, Pharmacy, and the Joseph M. Katz Graduate School of Business may be obtained from the appropriate Dean’s Office.

### 2018 FALL TERM (2191)

<table>
<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>4</td>
<td>Wednesday</td>
<td>Independence Day (University closed)</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Wednesday</td>
<td>Fall Term deadline for continuing students to register</td>
</tr>
<tr>
<td>August</td>
<td>13</td>
<td>Monday</td>
<td>Office of International Services (OIS) Graduate and Professional Student Orientation</td>
</tr>
<tr>
<td></td>
<td>17-19, incl.</td>
<td>Friday-Sunday</td>
<td>International Undergraduate Student Pre-Orientaion</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Monday</td>
<td>Residence halls open</td>
</tr>
<tr>
<td></td>
<td>20-26, incl.</td>
<td>Monday-Sunday</td>
<td>New and Transfer Undergraduate Student Orientation</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>Tuesday</td>
<td><strong>New Graduate and Professional Student Orientation</strong></td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Wednesday</td>
<td>New and Transfer Undergraduate Student Convocation</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>Thursday</td>
<td>New Faculty Orientation</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Friday</td>
<td>New Teaching Assistant Orientation</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Monday</td>
<td>Fall Term enrollment period ends for all students</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Monday</td>
<td>Fall Term classes begin</td>
</tr>
<tr>
<td>September</td>
<td>3</td>
<td>Monday</td>
<td>Labor Day (University closed)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Friday</td>
<td>Fall Term add/drop period ends</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Saturday</td>
<td>Fall Term extended drop period begins (Undergraduate Students Only)(Guidelines)</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Friday</td>
<td>Fall Term extended drop period ends (Undergraduate Students Only)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>Monday</td>
<td>Constitution Day</td>
</tr>
<tr>
<td>October</td>
<td>5-7, incl.</td>
<td>Friday-Sunday</td>
<td>Homecoming Activities</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Monday</td>
<td>Fall Break for students (no classes); University offices and buildings remain open and staffed during Fall Break*</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Tuesday</td>
<td>Monday classes normally scheduled to meet Monday, October 15th will meet on Tuesday, October 16th. Tuesday classes will not meet this week.*</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Friday</td>
<td>Fall Term deadline for students to submit Monitored Withdrawal forms to Dean’s Office</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Friday</td>
<td>Spring Term enrollment appointments begin (Veteran Students)</td>
</tr>
<tr>
<td></td>
<td>26-27, incl.</td>
<td>Friday-Saturday</td>
<td>Family Weekend</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>Monday</td>
<td>Spring Term enrollment appointments begin (Non-Veteran Students)</td>
</tr>
<tr>
<td>November</td>
<td>9</td>
<td>Friday</td>
<td>Last day for Spring Term enrollment appointments</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Saturday</td>
<td>Spring Term open enrollment begins</td>
</tr>
<tr>
<td></td>
<td>21-25, incl.</td>
<td>Wednesday-Sunday</td>
<td>Thanksgiving Recess for students (no classes), all schools</td>
</tr>
<tr>
<td></td>
<td>22-23, incl.</td>
<td>Thursday-Friday</td>
<td>Thanksgiving Recess for faculty and staff (University closed)</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Monday</td>
<td>Classes resume (all schools)</td>
</tr>
<tr>
<td>December</td>
<td>7</td>
<td>Friday</td>
<td>Fall Term: Last day for undergraduate day classes</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Friday</td>
<td>Spring Term deadline for continuing students to register</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Saturday</td>
<td>Reading Day</td>
</tr>
<tr>
<td></td>
<td>8-15, incl.</td>
<td>Saturday-Saturday</td>
<td>College of General Studies classes, Saturday Only classes, graduate classes, and evening classes will continue to meet during this period; final examinations should be held during the last scheduled class meeting</td>
</tr>
<tr>
<td></td>
<td>10-15, incl.</td>
<td>Monday-Saturday</td>
<td>Final examination period for undergraduate day classes</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Saturday</td>
<td>Fall Term Ends: Official date for degrees awarded in Fall Term</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Sunday</td>
<td>Residence halls close</td>
</tr>
<tr>
<td></td>
<td>16-Jan 6, incl.</td>
<td>Sunday-Sunday</td>
<td>Winter Recess for students (no classes), all schools</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Tuesday</td>
<td>Fall Term grades must be approved by instructors by 11:59 p.m.</td>
</tr>
</tbody>
</table>

Visit our Web site at [www.pitt.edu/calendars.html](http://www.pitt.edu/calendars.html)
Winter Recess for faculty and staff; designated University offices, including major responsibility centers and research projects, will be staffed as necessary during this period**

* Students in the professional programs in the Schools of Dental Medicine, Law, Medicine, Pharmacy, as well as the Katz Graduate School of Business, should contact their Dean’s Office regarding Fall Break.
** Employees covered by collective bargaining agreements will be governed by the terms of those agreements.

### 2019 SPRING TERM (2194)

<table>
<thead>
<tr>
<th>January</th>
<th>2</th>
<th>Wednesday</th>
<th>All University offices and buildings reopen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>Saturday</td>
<td>Residence halls reopen</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Monday</td>
<td>Spring Term enrollment period ends for all students</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Monday</td>
<td>Spring Term classes begin</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Friday</td>
<td>Spring Term add/drop period ends</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Saturday</td>
<td>Spring Term extended drop period begins (Undergraduate Students Only) (Guidelines)</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>Monday</td>
<td>Dr. Martin Luther King’s birthday observance (University closed)</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Friday</td>
<td>Spring Term extended drop period ends (Undergraduate Students Only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>8</td>
<td>Friday</td>
<td>Summer Term enrollment appointments begin (Veteran Students)</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Monday</td>
<td>Summer Term enrollment appointments begin (Non-Veteran Students)</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Friday</td>
<td>Honors Convocation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>8</td>
<td>Friday</td>
<td>Spring Term deadline for students to submit Monitored Withdrawal forms to Dean’s Office</td>
</tr>
<tr>
<td></td>
<td>10-17, incl.</td>
<td>Sunday-Sunday</td>
<td>Spring Recess for students (no classes); University offices and buildings remain open and staffed during Spring Recess except on Friday, Spring Holiday</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Friday</td>
<td>University’s observance of Spring Holiday (University closed)</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Friday</td>
<td>Fall Term enrollment appointments begin (Veteran Students)</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Monday</td>
<td>Fall Term enrollment appointments begin (Non-Veteran Students)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>5</td>
<td>Friday</td>
<td>Last day for Fall Term enrollment appointments</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Saturday</td>
<td>Fall Term open enrollment period begins</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Friday</td>
<td>Spring Term: Last day for undergraduate day classes</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Saturday</td>
<td>Reading Day</td>
</tr>
<tr>
<td></td>
<td>20-27, incl.</td>
<td>Saturday-Saturday</td>
<td>College of General Studies classes, Saturday Only classes, graduate classes, and evening classes will continue to meet during this period; final examinations should be held during the last scheduled class meeting</td>
</tr>
<tr>
<td></td>
<td>22-27, incl.</td>
<td>Monday-Saturday</td>
<td>Final examination period for all undergraduate day classes</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Thursday</td>
<td>Annual Graduate Commencement Convocation</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Saturday</td>
<td>Spring Term Ends: Official date for degrees awarded in Spring Term</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>Sunday</td>
<td>Annual Undergraduate Commencement Convocation</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>Sunday</td>
<td>Residence halls close (except for graduating seniors)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>1</td>
<td>Wednesday</td>
<td>Spring Term grades must be approved by instructors by 11:59 p.m.</td>
</tr>
</tbody>
</table>

### 2019 SUMMER TERM (2197)

| May      | 5        | Sunday    | Summer Term: Residence halls open |
|          | 6        | Monday    | Summer Term enrollment period ends and classes begin |
|          | 13       | Monday    | Summer 12-WEEK, 6-WEEK-1, 4-WEEK-1 sessions enrollment period ends and classes begin |
|          | 15       | Wednesday | Summer 4-WEEK-1 and 6-WEEK-1 sessions add/drop period ends |
|          | 17       | Friday    | Summer Term add/drop period ends         |
|          | 20       | Monday    | Summer 12-WEEK session add/drop period ends |
|          | 25       | Saturday  | Official date for degrees awarded in the School of Law and School of Dental Medicine |
|          | 27       | Monday    | Memorial Day (University closed)          |
|          | 29       | Wednesday | Summer 4-WEEK-1 session deadline for students to submit Monitored Withdrawal forms to Dean’s Office |
|          | 31       | Friday    | Summer 6-WEEK-1 session deadline for students to submit Monitored Withdrawal forms to Dean’s Office |
### 2019 SUMMER TERM (2197)

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 8</td>
<td>Saturday</td>
<td>Summer 4-WEEK-1 session ends: Final examinations scheduled during last class meeting</td>
</tr>
<tr>
<td>June 10</td>
<td>Monday</td>
<td>Summer 4-WEEK-2 session enrollment period ends and classes begin</td>
</tr>
<tr>
<td>June 12</td>
<td>Wednesday</td>
<td>Summer 4-WEEK-2 session add/drop period ends</td>
</tr>
<tr>
<td>June 22</td>
<td>Saturday</td>
<td>Summer 6-WEEK-1 session ends: Final examinations scheduled during last class meeting</td>
</tr>
<tr>
<td>June 22</td>
<td>Saturday</td>
<td>Official date for awarding of degrees</td>
</tr>
<tr>
<td>June 24</td>
<td>Monday</td>
<td>Summer 6-WEEK-2 session enrollment period ends and classes begin</td>
</tr>
<tr>
<td>June 26</td>
<td>Wednesday</td>
<td>Summer 6-WEEK-1 session grades must be approved by instructors by 11:59 p.m.</td>
</tr>
<tr>
<td>June 26</td>
<td>Wednesday</td>
<td>Summer 6-WEEK-2 session add/drop period ends</td>
</tr>
<tr>
<td>June 26</td>
<td>Wednesday</td>
<td>Summer 4-WEEK-2 session deadline for students to submit Monitored Withdrawal forms to Dean’s Office</td>
</tr>
</tbody>
</table>

### 2019 FALL TERM (2201)

**The beginning, ending, and add/drop dates for 2019 Fall Term (2201) classes and the beginning date for 2020 Spring Term (2204) classes are firm; ALL OTHER DATES ARE TENTATIVE.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 3</td>
<td>Saturday</td>
<td>Summer 12-WEEK, 6-WEEK-2, 4-WEEK-3 sessions end: Final examinations scheduled during last class meeting</td>
</tr>
<tr>
<td>August 7</td>
<td>Wednesday</td>
<td>Summer 12-WEEK, 6-WEEK-2, 4-WEEK-3 sessions grades must be approved by instructors by 11:59 p.m.</td>
</tr>
<tr>
<td>August 10</td>
<td>Saturday</td>
<td>Summer Term Ends: Final examinations scheduled during last class meeting</td>
</tr>
<tr>
<td>August 10</td>
<td>Saturday</td>
<td>Official date for awarding degrees</td>
</tr>
<tr>
<td>August 11</td>
<td>Sunday</td>
<td>Residence halls close</td>
</tr>
<tr>
<td>August 14</td>
<td>Wednesday</td>
<td>Summer Term grades must be approved by instructors by 11:59 p.m.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 6</td>
<td>Monday</td>
<td>Labor Day (University closed)</td>
</tr>
<tr>
<td>September 7</td>
<td>Friday</td>
<td>Fall Term add/drop period ends</td>
</tr>
<tr>
<td>September 13</td>
<td>Friday</td>
<td>Fall Term extended drop period begins (Undergraduate Students Only) (Guidelines)</td>
</tr>
<tr>
<td>September 17</td>
<td>Tuesday</td>
<td>Constitution Day</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>October TBD</td>
<td>Monday</td>
<td>Fall Break for students (no classes); University offices and buildings remain open and staffed during Fall Break*</td>
</tr>
<tr>
<td>October TBD</td>
<td>Tuesday</td>
<td>Monday classes normally scheduled to meet Monday, TBD will meet on Tuesday, TBD. Tuesday classes will not meet this week.*</td>
</tr>
<tr>
<td>October 25</td>
<td>Friday</td>
<td>Fall Term deadline for students to submit Monitored Withdrawal forms to Dean’s Office</td>
</tr>
<tr>
<td>October 25</td>
<td>Friday</td>
<td>Spring Term enrollment appointments begin (Veteran Students)</td>
</tr>
<tr>
<td>October 28</td>
<td>Monday</td>
<td>Spring Term enrollment appointments begin (Non-Veteran Students)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 8</td>
<td>Friday</td>
<td>Last day for Spring Term enrollment appointments</td>
</tr>
<tr>
<td>November 9</td>
<td>Saturday</td>
<td>Spring Term open enrollment period begins</td>
</tr>
<tr>
<td>November 27-Dec 1, incl.</td>
<td>Wednesday-Sunday</td>
<td>Thanksgiving Recess for students (no classes), all schools</td>
</tr>
<tr>
<td>November 28-29, incl.</td>
<td>Thursday-Friday</td>
<td>Thanksgiving Recess for faculty and staff (University closed)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2</td>
<td>Monday-Friday</td>
<td>Classes resume (all schools)</td>
</tr>
<tr>
<td>Date</td>
<td>Day</td>
<td>Event</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>Friday</td>
<td>Fall Term: Last day for undergraduate day classes</td>
</tr>
<tr>
<td>6</td>
<td>Friday</td>
<td>Spring Term deadline for continuing students to register</td>
</tr>
<tr>
<td>7</td>
<td>Saturday</td>
<td>Reading Day</td>
</tr>
<tr>
<td>7-14, incl.</td>
<td>Saturday-Saturday</td>
<td>College of General Studies classes, Saturday Only classes, graduate classes, and evening classes will continue to meet during this period; final examinations should be held during the last scheduled class meeting</td>
</tr>
<tr>
<td>9-14, incl.</td>
<td>Monday-Saturday</td>
<td>Final examination period for undergraduate day classes</td>
</tr>
<tr>
<td>14</td>
<td>Saturday</td>
<td>Fall Term Ends: Official date for degrees awarded in Fall Term</td>
</tr>
<tr>
<td>15</td>
<td>Sunday</td>
<td>Residence halls close</td>
</tr>
<tr>
<td>15-Jan 5, incl.</td>
<td>Sunday-Sunday</td>
<td>Winter Recess for students (no classes), all schools</td>
</tr>
</tbody>
</table>

### 2019 FALL TERM (2201)

<table>
<thead>
<tr>
<th>Month</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>December</td>
<td>17</td>
<td>Tuesday Fall Term grades must be approved by instructors by 11:59 p.m.</td>
</tr>
<tr>
<td>24-Jan 1, incl.</td>
<td>Tuesday-Wednesday</td>
<td>Winter Recess for faculty and staff; designated University offices, including major responsibility centers and research projects, will be staffed as necessary during this period**</td>
</tr>
</tbody>
</table>

* Students in the professional programs in the Schools of Dental Medicine, Law, Medicine, Pharmacy, as well as the Katz Graduate School of Business, should contact their Dean’s Office regarding Fall Break.

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### 2019 SPRING TERM (2204)

<table>
<thead>
<tr>
<th>Month</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>2</td>
<td>Thursday All University offices and buildings reopen</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Saturday Residence halls open</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Monday Spring Term classes begin</td>
</tr>
</tbody>
</table>

NOTE: THE UNIVERSITY RESERVES THE RIGHT TO MAKE SUCH CALENDAR CHANGES AS IT DEEMS NECESSARY.
# SUMMER 2019 ACADEMIC CALENDAR BY SESSION

<table>
<thead>
<tr>
<th>ENROLLMENT and ADD/DROP BEGINS</th>
<th>4WK1 4-Week-1</th>
<th>4WK2 4-Week-2</th>
<th>4WK3 4-Week-3</th>
<th>6WK1 6-Week-1</th>
<th>6WK2 6-Week-2</th>
<th>12 WK 12-Week</th>
<th>TERM Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence Halls Open</td>
<td>Sun 5/12</td>
<td>Sun 6/9</td>
<td>Sun 7/7</td>
<td>Sun 5/12</td>
<td>Sun 6/23</td>
<td>Sun 5/12</td>
<td>Sun 5/5</td>
</tr>
<tr>
<td>Enrollment Ends/ Classes Begin</td>
<td>Mon 5/13</td>
<td>Mon 6/10</td>
<td>Mon 7/8</td>
<td>Mon 5/13</td>
<td>Mon 6/24</td>
<td>Mon 5/13</td>
<td>Mon 5/6</td>
</tr>
<tr>
<td>Monitored Withdrawal Deadline</td>
<td>Wed 5/29</td>
<td>Wed 6/26</td>
<td>Wed 7/24</td>
<td>Fri 6/7</td>
<td>Fri 7/19</td>
<td>Fri 7/5</td>
<td>Fri 7/5</td>
</tr>
<tr>
<td>Classes End/Final Exam Held in Last Class Meeting</td>
<td>Sat 6/8</td>
<td>Sat 7/6</td>
<td>Sat 8/3</td>
<td>Sat 6/22</td>
<td>Sat 8/3</td>
<td>Sat 8/3</td>
<td>Sat 8/10</td>
</tr>
<tr>
<td>Residence Halls Close</td>
<td>Sun 6/9</td>
<td>Sun 7/7</td>
<td>Sun 8/4</td>
<td>Sun 6/23</td>
<td>Sun 8/4</td>
<td>Sun 8/4</td>
<td>Sun 8/11</td>
</tr>
<tr>
<td>Grade Roster Approval Deadline</td>
<td>Wed 6/12</td>
<td>Wed 7/10</td>
<td>Wed 8/7</td>
<td>Wed 6/26</td>
<td>Wed 8/7</td>
<td>Wed 8/7</td>
<td>Wed 8/14</td>
</tr>
</tbody>
</table>

* Memorial Day, Monday 5/27, University Closed + Independence Day, Thursday 7/4, University Closed
<table>
<thead>
<tr>
<th>Faculty Assembly</th>
<th>Senate Council</th>
<th>Staff Council</th>
<th>Year</th>
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University Senate

| Wednesday | March 2019, TBD (Plenary Session) | 2019 |

**Due to spring break (March 10-16, 2019), there are two weeks between Faculty Assembly and Senate Council for March 2019 only.
University of Pittsburgh Graduate and Professional Studies Catalog for the Pittsburgh Campus!

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University of Pittsburgh Nondiscrimination Policy Statement

The University of Pittsburgh, as an educational institution and as an employer, values equality of opportunity, human dignity, and racial/ethnic and cultural diversity. Accordingly, as fully explained in Policy 07-01-03, the University prohibits and will not engage in discrimination or harassment on the basis of race, color, religion, national origin, ancestry, sex, age, marital status, familial status, sexual orientation, gender identity and expression, genetic information, disability, or status as a veteran. The University also prohibits and will not engage in retaliation against any person who makes a claim of discrimination or harassment or who provides information in such an investigation. Further, the University will continue to take affirmative steps to support and advance these values consistent with the University's mission. This policy applies to admissions, employment, access to and treatment in University programs and activities. This is a commitment made by the University and is in accordance with federal, state, and/or local laws and regulations.

For information on University equal opportunity and affirmative action programs, please contact: University of Pittsburgh, Office of Affirmative Action, Diversity and Inclusion, Pamela W. Connelly, Associate Vice Chancellor, 500 Craig Hall, Pittsburgh, PA 15260 (412) 648-7860.

For complete details on the University's Nondiscrimination Policy, please refer to Policy 07-01-03. For information on how to file a complaint under this policy, please refer to Procedure 07-01-03.

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About the University of Pittsburgh

The University of Pittsburgh is an internationally respected center of learning and research, offering exceptional educational opportunities in the humanities, sciences, and professions. A state-related, coeducational institution, the University of Pittsburgh's Pittsburgh campus offers a multitude of degree-granting and other programs housed in 16 undergraduate, graduate, and professional schools. The University system includes the Pittsburgh campus and four regional campuses at Bradford, Johnstown, Greensburg, and Titusville; the regional campuses offer undergraduate programs only.

Mission

The University of Pittsburgh, founded in 1787, is one of the oldest institutions of higher education in the United States. As one of the nation's distinguished comprehensive universities, the resources of the University constitute an invaluable asset for the intellectual, economic, and social enrichment of Pennsylvania, while the international prestige of the University enhances the image of Pennsylvania throughout the world.

The University's mission is to:

- Provide high-quality undergraduate programs in the arts and sciences and professional fields, with emphasis upon those of special benefit to the citizens of Pennsylvania;
- Offer superior graduate programs in the arts and sciences and the professions that respond to the needs of Pennsylvania, as well as to the broader needs of the nation and the world;
- Engage in research, artistic, and scholarly activities that advance learning through the extension of the frontiers of knowledge and creative endeavor;
- Cooperate with industrial and governmental institutions to transfer knowledge in science, technology, and health care;
- Offer continuing education programs adapted to the personal enrichment, professional upgrading, and career advancement interests and needs of adult Pennsylvanians; and
- Make available to local communities and public agencies the expertise of the University in ways that are consistent with the primary teaching and research functions and contribute to social, intellectual, and economic development in the Commonwealth, the nation, and the world.

The trustees, faculty, staff, students, and administration of the University are dedicated to accomplishing this mission, to which they pledge their individual and collective efforts, determined that the University shall continue to be counted among the prominent institutions of higher education throughout the world.

History

The University began in the Pennsylvania wilderness as the Pittsburgh Academy in 1787, the year the U.S. Constitution was adopted. Thirty-two years later, the Pittsburgh Academy became the Western University of Pittsburgh, and in 1908, the school changed its name to the University of Pittsburgh.

The recognition of graduate study at the University of Pittsburgh began with the awarding of Master of Arts degrees in 1836. By 1870, over 30 MA degrees had been awarded. These degrees were conferred for study beyond the Bachelor of Arts degree. In 1884, Chancellor Milton Goff set up a two-year professional study program leading to either a Master of Philosophy (predecessor of the Master of Science degree) or a Master of Arts degree and a three-year program leading to a Doctor of Philosophy degree. Before admission to these programs, each student was required to show proficiency in three areas of study. Both master's and doctoral candidates were required to prepare and defend theses.

In 1906, new rules were formulated for graduate study, requiring students to be in residence and requiring the completion of one year of study or 30 credits for the master's degree and three years or 90 credits for the doctoral degree. The catalogs of 1908 and 1909 announced the establishment of the Graduate School with five departments offering courses for the Doctor of Philosophy degree. These departments, plus five others, offered courses for the Master of Arts degree.
In 1910, a faculty committee drafted proposals, adopted by the board of trustees in 1913, making the Graduate School an independent administrative unit of the University and authorizing the selection of a Graduate Council. The Graduate School was grouped into three divisions (Humanities, Social Sciences, and Natural Sciences) in 1947. Until 1956, the administration of graduate study was the responsibility of the dean of the Graduate School and the Graduate Council. At that time, the individual schools and the three divisions were given direct administrative responsibility for their graduate programs in accord with the regulations established by the University Council on Graduate Study—formerly the Graduate Council. In 1968, the dean of the Graduate School retired from his administrative role, and the position he had held was discontinued. General responsibility for the University's graduate programs was assigned to the provost pending reorganization of the University's graduate structure. The University Council on Graduate Study, the University administration, and members of the Graduate Faculty cooperated in drafting a proposed reorganization of graduate study, which was approved by written ballot by the entire Graduate Faculty and, in turn, accepted by Chancellor Wesley Posvar. This organizational structure became effective July 1, 1971, and is still the official structure.

Thus, during the 200-plus year history of the University, graduate education has grown to encompass the Dietrich School of Arts and Sciences and all 13 of the professional schools, which share a commitment to meet the nation's need for well-educated researchers, scholars, and leaders of professions and the tri-state region's need for trained professionals.

A private institution for most of its past, the University of Pittsburgh became state-related in 1966, establishing a relationship with the Commonwealth of Pennsylvania that continues to benefit both partners. Today, as an elected member of the prestigious Association of American Universities, the University of Pittsburgh claims its place among the top public research universities in the nation.

**Accreditation**

The University of Pittsburgh is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19104, (267) 284 - 5000. In addition, programs may be accredited by discipline-specific accrediting bodies. See Schools, Departments, and Programs section of this catalog for this information.

**Web Address**

For more information on the University of Pittsburgh, see the University's Web site at www.pitt.edu.

**Organization of Graduate and Professional Education at the University**

While the University Council on Graduate Study (www.pitt.edu/~graduate/ucgs.html), acting for the Graduate Faculty, develops minimum standards for graduate work throughout the University, the immediate responsibility for developing and administering graduate programs is assigned to the deans and Graduate Faculty members of the several schools and the Dietrich School of Arts and Sciences. This responsibility applies both to the traditional MA, MS, and PhD programs and to programs leading to advanced professional degrees, except for first-professional degrees (i.e., the MD, JD, LLM, PharmD, and DMD). The provost has responsibility for the general supervision of graduate and professional programs, including first-professional degree programs, throughout the University, giving leadership to the deans and faculties in maintaining high standards of instruction and research.

Faculty are appointed to the Graduate Faculty by the provost upon recommendation by the dean on the basis of an appraisal by the faculty of a department or other appropriate faculty group. Graduate Faculty are competent in graduate instruction and in supervision of student research at all levels and are active in advancing knowledge through their own research.
Administrative Officers, Schools, and Campuses

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**Board of Trustees of the University**

The Board of Trustees is responsible for advancing the purposes of the University; promoting and protecting its independence, academic freedom, and integrity; and enhancing and preserving its assets for the benefit of future students and society at large. In addition, because the University of Pittsburgh is a state-related institution, the trustees ensure that Pitt meets its obligations both to the Commonwealth of Pennsylvania and to society generally.

General administrative, academic, and management authority is delegated to the chancellor. However, the board retains ultimate responsibility for all University affairs.

There are three or more regular meetings of the Board of Trustees each year, including an annual meeting. Special meetings also may be called. Much of the board’s work is carried out by committees; many of these committees include faculty, staff, and students as non-voting representatives.

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Patrick Gallagher, Chancellor of the University of Pittsburgh, Member Ex-Officio (voting)

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Schools And Campuses-University of Pittsburgh

Schools

KENNETH P. DIETRICH SCHOOL OF ARTS AND SCIENCES AND COLLEGE OF GENERAL STUDIES
GRADUATE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS
GRADUATE SCHOOL OF PUBLIC HEALTH
JOSEPH M. KATZ GRADUATE SCHOOL OF BUSINESS AND COLLEGE OF BUSINESS ADMINISTRATION
SCHOOL OF COMPUTING AND INFORMATION
SCHOOL OF DENTAL MEDICINE
SCHOOL OF EDUCATION
JOHN A. SWANSON SCHOOL OF ENGINEERING
SCHOOL OF HEALTH AND REHABILITATION SCIENCES
SCHOOL OF INFORMATION SCIENCES
SCHOOL OF LAW
SCHOOL OF MEDICINE
SCHOOL OF NURSING
SCHOOL OF PHARMACY
SCHOOL OF SOCIAL WORK
UNIVERSITY HONORS COLLEGE

Regional Campuses

UNIVERSITY OF PITTSBURGH at BRADFORD
UNIVERSITY OF PITTSBURGH at GREENSBURG
UNIVERSITY OF PITTSBURGH at JOHNSTOWN
UNIVERSITY OF PITTSBURGH at TITUSVILLE
Academic Regulations

Advising

The quality of education that graduate students receive is greatly enhanced with good academic advising at all stages of their program. Given the diversity of these needs, each school and program must determine the best way to provide these services. Each program should have a document describing its view of good graduate advising practices and a clear policy on how good graduate advising is assessed and rewarded. For more information on academic advising at the graduate level, see Elements of Good Academic Advising. Students are encouraged to consult with the individual school for school-specific advising services.

Allowable Credits

There are certain limitations on the credits that can be earned toward a graduate degree at the University of Pittsburgh. Those limitations are detailed below.

Acceptance of Transfer Credits

Students who have completed graduate courses in degree-granting graduate programs at other appropriately accredited institutions prior to admission to the University of Pittsburgh should submit official transcripts from those institutions at the time they apply so that the courses can be evaluated for transfer credit. In no case may the total number of credits transferred exceed the maximum number stated in the sections of this bulletin pertaining to advanced degree requirements. For more detail, see credit requirement information in the sections on Regulations Pertaining to Master of Arts and Master of Science Degrees, Professional Master's Degrees, or Doctoral Degrees as well as the relevant program information in Schools, Departments, and Programs. Grades (and grade points) are not recorded for credits accepted by transfer.

Transfer credits will not be accepted for courses in which a grade lower than B (GPA=3.00) or its equivalent has been received. No credit will be granted toward an advanced degree for work completed in extension courses, correspondence courses, courses delivered electronically, or those offered in the off-campus center of another institution unless those courses are approved for equivalent graduate degrees at that institution and the institution has an accredited program.

The completion of requirements for advanced degrees must be satisfied through registration at the Pittsburgh campus of the University of Pittsburgh. Graduate students already enrolled may, when approved in advance by their department and the dean, spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and transfer those credits toward the requirements for an advanced degree at the University of Pittsburgh. In such instances, neither the University nor any of its components are responsible for providing any financial assistance to the graduate student.

Course Work Acceptable as Graduate Credit

A substantial proportion of courses acceptable toward a graduate degree should be designed explicitly for graduate students. Introductory graduate-level (master's-level) courses are numbered 2000-2999, and those at an advanced graduate-level (doctoral-level) are numbered 3000-3999. To be eligible for a master's degree, a student must have completed at least four courses (12 credits) or one-half the total number of credits submitted for the degree, whichever is greater, at the graduate level (2000 or 3000 series). Doctoral students must complete additional graduate-level courses as determined by their department or school. No lower-level undergraduate courses numbered 0001-0999 may be applied toward a graduate degree.

Credit by Course Examination

Some schools at the University offer credit by course examination. Each school authorized to offer graduate courses clearly specifies whether or not students may obtain credit toward a degree in this fashion and, if so, for which courses. A school granting graduate credit for life or work experience will do so only through the option of credit by examination.
Cross-Registration

Cross-registration provides students with the opportunity to enroll in courses at member institutions of the Pittsburgh Council on Higher Education (PCHE). The designated colleges and universities at which undergraduate students may cross-register include Carlow University, Carnegie Mellon University, Chatham University, Community College of Allegheny County, Duquesne University, La Roche College, Pittsburgh Theological Seminary, Point Park University, and Robert Morris University. Only full-time students may cross-register. Please note that students must maintain a full-time course load (at least 9 credits as a graduate student) at Pitt while cross-registered. Students who cross-register do not pay tuition to the host institution; however, they are responsible for any additional fees associated with the course such as laboratory fees, books, and the like. Students normally may register for only one course off campus in a given term. The grades and credits earned at the host institution are transferred to the home school. The academic policies of the host institution prevail.

Cross-registration is only available in the fall and spring terms. During the summer, students may attend one of the above colleges as guest students, but they must pay that institution's tuition and fees. Students are discouraged from cross-registering during their term of graduation to avoid any delays in the receipt of course credit needed to graduate. Students should meet with their advisors or a school representative before they cross-register. For more information on cross-registration, visit www.pchepa.org.

Enrollment in Graduate Courses as an Undergraduate

University of Pittsburgh undergraduate students with sufficient preparation are permitted to enroll in certain graduate courses at the University following procedures determined by each school. The graduate credits earned may be counted toward the undergraduate degree if approved by the student's school. These may not be counted as credits toward a graduate degree except as noted below.

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

Registration (Enrollment)

Registering for Classes

After being admitted to a graduate program, students may register for classes during the enrollment period. The enrollment period for a term or session is published in the University's Academic Calendar.

Students registering for the first time are advised to complete the enrollment process well before the beginning of the term. Typically, the first day of classes is the last day for students to enroll. Students who enroll after the first day of the term will be assessed a late registration fee.

Most students have the ability to utilize self-service enrollment tools available through the Student Portal or Pitt PS Mobile. Continuing students with the ability to utilize self-service enrollment will be assigned an enrollment appointment during the first two weeks of the enrollment period.

Once students have enrolled they may view their class schedules online via the Student Portal or Pitt PS Mobile.

Full-Time and Part-Time Study

Students must be officially admitted to the University to be eligible to register for classes. Graduate students who register for 9 to 15 credits in the fall or spring term are full-time students and are assessed the tuition rate for their school (for detail, see www.ir.pitt.edu/tuition). A school may require students enrolled in a degree program to register for more than 9 credits. Students who register for fewer than 9 credits are part-time students and are billed on a per-credit basis. During the summer term and summer sessions, most students are billed on a per-credit basis regardless of the
number of credits taken. At the Joseph M. Katz Graduate School of Business, full-time MBA students are billed a flat rate in the summer term (since this is a one-year program, tuition is spread over three terms).

Doctoral students who have completed all credit requirements for the degree, including any minimum dissertation credit requirements, and are working full-time on their dissertations may register for full-time dissertation study, which carries no credits or letter grade but provides students full-time status. Students so enrolled are assessed a special tuition fee but are still responsible for paying the full-time computer and network, security/transportation, wellness, and activity fees. Students must consult with the dean's office of their school for permission to register for full-time dissertation study.

**Maximum Credits Per Term**

No student is permitted to register for more than 15 graduate credits without written permission from the dean of the academic center in which the student is pursuing a degree. Graduate students who register for more than 15 credits will be billed for each additional credit that exceeds their full-time tuition rate. Exceptions include the following:

- The Joseph M. Katz Graduate School of Business allows its full-time MBA students to register for up to 18 credits in the fall and spring terms before additional per-credit tuition charges apply.
- The School of Law has no maximum number of credits in its first-professional programs for billing purposes, but permission of the associate dean is required to register for more than 15 credits per term.
- The Graduate School of Public Health allows students pursuing the Master of Health Administration or the Master of Public Health in environmental and occupational health to take up to 16 credits during their first year of study.
- The School of Social Work allows its students to register for 16 credits in the fall term before additional per-credit tuition charges apply.

Individual schools and departments may restrict the maximum credit load for programs of any or all of their graduate students.

**Registration Status at Graduation**

All graduate students must register for at least 1 credit or full-time dissertation study during the 12-month period preceding graduation (that is, must be on active status). Waivers may be requested by submitting a written request to the University Registrar from the dean of the school. The request should be based on extenuating circumstances, e.g., inability of the student's dissertation committee to meet during the final term when a student has given reasonable notice or the student has completed all degree requirements in a previous term. Waivers will not be granted to students who are inactive.

**Inactive Status**

Students who have not registered for at least 1 credit or full-time dissertation study (eligible doctoral students) during a 12-month period are transferred to inactive status and must file an application for readmission to graduate study (application fee required) before being permitted to register again. Students on inactive status cannot apply to graduate or take preliminary or comprehensive examinations. Also, students on inactive status are not eligible to use University facilities and should not expect to receive counseling from the faculty or active supervision by their advisor and committee.

**Adding and Dropping Courses**

Students may add and drop courses only during the add/drop period. The dates for the add/drop period are listed in the University's Academic Calendar. Students who no longer wish to remain enrolled in a course after the add/drop period has ended may withdraw from the course or resign from the University. See Monitored Withdrawal from a Course or Resigning from the University.

**Auditing Courses**
With the consent of the school and instructor, students may choose to audit a course. To audit a course, a student must register and pay tuition for the course. The audit grade (N) is not counted toward graduation or the GPA.

Registering for Two Independent Degree Programs Simultaneously

Students may pursue two independent graduate degrees simultaneously in two different schools within the University (joint degree) or two different departments within the same school (dual degree). Normally, such students should be enrolled for no more than a total of 15 credits per term. Special approvals and regulations apply before a student is allowed to register for courses in pursuit of two independent graduate degrees. See discussion in Special Academic Opportunities for further detail.

Registering for Cooperative, Dual-Degree, and Joint-Degree Programs

Dual- and joint-degree programs result in two degrees being awarded. Requirements for these programs include all or most of the requirements of two distinct academic degree programs. Dual programs exist within a single school; joint programs exist between two or more schools; cooperative programs are administered by two or more institutions. Before registering for courses in pursuit of a cooperative, dual-degree, or joint-degree program, a student must be admitted to both programs. See discussion in Special Academic Opportunities for further detail.

Monitored Withdrawal from a Course

After the add/drop period has ended, students may withdraw from a course that they no longer wish to attend by completing a Monitored Withdrawal Request form in the office of the school offering the course. Students must process the Monitored Withdrawal Request form within the first nine weeks of the term in the fall and spring. Because summer sessions vary in length, students should check the University's Academic Calendar for those deadlines. Students should check with the school offering the course for the last day to submit a Monitored Withdrawal Request form. The grade W will appear on the student's transcript. There is no financial adjustment to students' tuition or fee obligations involved in withdrawing from courses, but withdrawing may jeopardize satisfactory academic progress, financial aid, and assistantships or fellowships.

Resigning from the University for a Specific Term

If students decide to drop all of their courses after the add/drop period has ended and before 60 percent of the term or session has been completed, they must resign from the University for that term. Official resignation from the University requires students to contact the Student Appeals Office. Students have several options. They may resign in person, by mail, or by calling 412-624-7585, where students may leave a message 24 hours a day, including weekends and holidays. An R grade will appear on the student's academic transcript. Tuition is prorated from the date of the student's notification to the Student Appeals Office of the student's desire to resign, unless 60 percent of the term has been completed, in which case there is no refund.

After the 60 percent point of the term or session has passed, students who wish to terminate their registration may withdrawal from all classes only with the permission of their academic dean. If the reason for withdrawal is medical or psychological in nature, the academic dean may consult with the director of the Student Health Service prior to making a determination. There is no financial adjustment associated with this procedure, which results in the assignment of W grades for the courses.

Grading and Records

GPA
The Grade Point Average (GPA) is the numeric indication of a student's academic achievement based on a 4.00 grade point scale. The value averages the total letter grades earned and is available by term or career. Some academic centers may also maintain degree and/or major/departmental GPA values.

**Academic Standards**

An average of at least B (GPA=3.00) is required in the courses that make up the program for any graduate degree. Students with full graduate status are automatically placed on probation whenever their cumulative GPA falls below 3.00. Each school determines the restrictions placed on a student on probation. See Probation, Suspension, and Dismissal for further detail.

A student on provisional or special status or on probation is not eligible to take the PhD preliminary evaluation or the MA, MS, or PhD comprehensive examination, or to be graduated.

**Grading System**

The University of Pittsburgh has a standard letter grade system (see Letter Grades below). Some additional grading options are available in some courses as determined by the school and the instructor (see sections below on University Grading Options and Other Grades). Students are subject to the grading system of the school in which they are taking the course.

**University Grading Options**

Individual schools may elect to offer one of the following grade options for its courses:

- **LG** Letter Grade
- **H/S/U** Honors/Satisfactory/Unsatisfactory
- **H/HS/LS/U** Honors/High Satisfactory/Satisfactory/Low Satisfactory/Unsatisfactory*
- **S/NC** Satisfactory/No-Credit (Formerly the S/N Option)
- **LG and H/S/U** Letter Grade and Honors/Satisfactory/Unsatisfactory
- **LG and S/NC** Letter Grade and Satisfactory/No-Credit

*This option is available for professional students in the School of Medicine only.

From among the grading options approved by the school, each department identifies those it deems acceptable for its courses. Furthermore, course instructors may specify, within the grading options approved by the school and department, which grading options may be selected by students taking their course.

Students should choose a grading option from those listed with the course in the Class Search function within the University's Student Information system. Grade Option/Audit Request forms for graduate courses are not required. Schools establish their own deadlines and procedures for processing grade option and audit requests.

Students receive the grade H or S for satisfactory work and U for unsatisfactory work. The grades H and S are counted toward graduation but not the student's GPA. The grades NC and U are not counted toward graduation or the GPA. The S grade indicates adequate graduate attainment; in evaluating thesis or dissertation research, an instructor may only use the S/NC grading option.

Students may audit a course and receive an N grade with the consent of the instructor and school offering the course. However, to audit a course, a student must register and pay tuition for the course. The N grade is not counted toward graduation or the GPA.
Letter Grades

The University's letter grade system for graduate and professional courses is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.00</td>
</tr>
<tr>
<td>A</td>
<td>4.00 Superior Attainment</td>
</tr>
<tr>
<td>A-</td>
<td>3.75</td>
</tr>
<tr>
<td>B+</td>
<td>3.25</td>
</tr>
<tr>
<td>B</td>
<td>3.00 Adequate graduate-level attainment</td>
</tr>
<tr>
<td>B-</td>
<td>2.75</td>
</tr>
<tr>
<td>C+</td>
<td>2.25</td>
</tr>
<tr>
<td>C</td>
<td>2.00 Minimal graduate-level attainment</td>
</tr>
<tr>
<td>C-</td>
<td>1.75</td>
</tr>
<tr>
<td>D+</td>
<td>1.25</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.75</td>
</tr>
<tr>
<td>F</td>
<td>0.00 Failure</td>
</tr>
</tbody>
</table>

Courses in the first-professional programs in law, dental medicine, medicine, and pharmacy may use different attainment standards.

Other Grades: Incomplete, Withdraw, Resign

Upon a student's completion of a course, one of the grades listed below may appear on the student's transcript in lieu of one of the options selected by the student and/or instructor under University Grading Options. None of these grades carries quality points. Students should consult with their individual school for information on any school-specific regulations regarding these grades.

G Grade

The G grade signifies unfinished course work due to extenuating personal circumstances. Students assigned G grades are required to complete course requirements no later than one year after the term in which the course was taken. After the deadline has passed, the G grade will remain on the record, and the student will be required to reregister for the course if it is needed to fulfill requirements for graduation.

I Grade
The I grade signifies incomplete course work due to nature of the course, clinical work, or incomplete research work in individual guidance courses or seminars.

**W Grade**

The W grade signifies that a student withdrew from the course. See Monitored Withdrawal from a Course for more information.

**R Grade**

The R grade indicates that a student has resigned from the University. See Resigning from the University for more information.

**Repeating Courses**

A student may repeat any course in which a grade of B- or lower is received if an authorization to repeat the course is given by the student's advisor and/or department. A school may restrict the type and/or number of different courses that may be repeated during one degree program. The grade earned by repeating a course is used in lieu of the grade originally earned, although the original grade is not erased from the transcript. No course may be repeated more than twice. No sequence course may be repeated for credit after a more advanced course in that sequence has been passed with a B or higher grade. The repeated course must be the same as that in which the original grade was earned. In extenuating circumstances, a department chair, with the dean's approval, may substitute another course of similar content. Grades of W, R, or N reported for the repeated course will not be counted as a course repeat. To initiate only the last course grade being computed in the GPA, a Course Repeat form must be filed with the dean's office.

**Grade Changes**

The instructor of a course may change a student's grade by submitting a Grade Change Request Form which can be found on the Faculty Portal. All grade changes require the authorization of the dean of the school from which the original grade was issued. Students can verify grade changes for the terms available online via Student Portal at my.pitt.edu or via Pitt PS Mobile.

**Transcripts**

An academic transcript serves as a permanent record of a student's academic progress. The transcript is a cumulative record of the student's GPA, as well as a record of the department, title, and grade for each course in which the student has enrolled and summary advanced standing information. Students may request an official transcript that bears the seal and signature of the University registrar. Upon graduation, the transcript reflects a student's degree and date, major, minor, or certificate, and, if applicable, honors, area of concentration.

**Academic Record**

The academic record is not an official University transcript, but a document containing a student's complete University of Pittsburgh academic history. In addition to the information provided on the transcript, the academic record may display additional course details, certain academic events and detailed advanced standing/placement/transfer credit information. Students can view a copy of their academic record in the Student Center at my.pitt.edu.

**Grade Report**

Students can access their grades online via the Student Center at my.pitt.edu or via Pitt PS Mobile. Grade submission deadlines can be found in the University's Academic Calendar.
Academic Honors

Schools and programs may recognize academic achievement by students through fellowships, scholarships, and other awards. Students should consult with their individual school and/or program for more information.

Probation, Suspension, and Dismissal

Students who fail to make satisfactory progress may be subject to academic probation and/or suspension and dismissal. Students who have completed at least 9 quality point credits and whose GPA falls below 3.00 will be placed on academic probation by the dean of their school. After a certain period of time on academic probation (the period is determined by the student's school), a student is subject to academic suspension and restricted from registering for classes in that school. Details of the school's probation system are available through that school. Students on probation are not eligible to take the PhD preliminary evaluation or the MA, MS, or PhD comprehensive examination, or to be graduated.

Effect on Financial Aid and Scholarships

Conditions for loan eligibility and many scholarships (including those for teaching assistants, teaching fellows, graduate student assistants, and graduate student researchers) usually require students to complete a specified number of credits each year and maintain a specified grade point average (GPA: credits counted toward the degree). Questions about the effect of unsatisfactory academic standing on loans should be directed to the Office of Admissions and Financial Aid in Alumni Hall (4227 Fifth Avenue) at 412-624-7488. Questions about the effect of unsatisfactory academic standing on scholarships, including teaching and research assistantships, should be directed to the particular graduate school.

Editorial Assistance and Publication of Theses/Dissertations

All graduate students must follow University regulations regarding editorial assistance and publishing of theses and dissertations as detailed below.

Editorial Assistance

A student preparing a dissertation or other written work as part of academic requirements may, when appropriate, use the assistance of professional editors, provided that the following rules are observed:

1. The student receives the approval of the research advisor or professor of the course in which written work is being submitted.
2. The student receives assistance only in use of language and not in the subject matter of the written work.
3. The student acknowledges and describes all editorial assistance in the report.

Publication of Theses and Dissertations

Any thesis or dissertation may be published, either by the University or through an outside agency, provided due credit is given the University. No form of publication, however, will relieve the student of his or her responsibility to fulfill the University's electronic theses or dissertation (ETD) requirements. Refer to the sections on Thesis Option or Dissertation and Abstract for specific requirements and to the ETD website at www.pitt.edu/~graduate/etd.

The doctoral candidate is required to execute an agreement with Proquest University Microfilms Inc. for the publication of the dissertation in the Proquest/UMI repository.

Advisors should exercise responsibility in approving research topics that will not endanger long-term research projects or the safety or welfare of informants. Dependent upon the circumstances and the research point at which the danger is recognized, the provost's office may authorize a delay in publication of a dissertation for up to a maximum of one calendar year. Similarly, a publication may be withheld for a maximum of one year, if required, for filing a patent application.
Regulations Pertaining to Master of Arts and Master of Science Degrees

The Master of Arts (MA) and Master of Science (MS) degree programs provide an introduction to scholarly activities and research and often serve as preparation for teaching careers. These degrees are awarded for the completion of a coherent program designed to assure the mastery of specified knowledge and skills, rather than a random accumulation of a certain number of courses. The overall form and content of the student's program of study is the responsibility of the faculty of the department. To carry out this responsibility, each student must be assigned a major advisor, who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines.

MA and MS Requirements

The Master of Arts and Master of Science degrees normally require the satisfactory completion of approximately 30 credits of graduate study approved by the department or school. No Master of Arts or Master of Science degree program may require fewer than 24 course credits. No more than 6 credits may be granted toward the completion of the requirements for a master's degree for work completed at another accredited graduate institution or for work previously completed at the University of Pittsburgh. See Acceptance of Transfer Credits section for further information.

At least four courses (12 credits) or one-half the master's degree program, whichever is greater, must be at the graduate-level (the 2000 or 3000 series) and must be completed with an average grade of B (3.00). No course numbered below 1000 may be applied toward graduate degree requirements.

Some master's programs may include approved areas of concentration or minors. Areas of concentration define and describe the student's training and expertise within the broader discipline. Minors represent significant course work completed in an area related to the student's specialty. Such areas of concentration or minors are added to the transcript upon the granting of the degree.

Master's degrees are conferred only on those students who have completed all courses required for the degree with an average grade of B (i.e., a 3.00 GPA).

The requirement of proficiency in second languages is at the discretion of individual departments or schools.

Departments provide students with a copy of school and departmental regulations appropriate for their program and/or maintain current and accurate Web sites covering this information. Students are expected to become familiar with these and to satisfy all prescribed degree requirements.

Comprehensive Examination

MA or MS degrees are conferred only upon those students who, in one or more comprehensive examinations or the equivalent, show that they have mastered the general field of their graduate study. Each department or similar unit is responsible for specifying the content and procedure for administration of the comprehensive examination and will specify for each candidate the field of his or her examination, which may vary from student to student. When a program substitutes an equivalent requirement for the comprehensive examination, the department should notify the University Council on Graduate Study and describe the substitution.

Students on inactive, special, or provisional status or on probation are not eligible to take a comprehensive examination. These examinations must be taken at least one month prior to the last day of the term in which the degree is to be granted. The results must be reported promptly to the office of the dean but no later than the last day of the term in which the examination is administered. A student who is unable to complete all degree requirements within a two-year period after passing the comprehensive examination may be re-examined at the discretion of the department program director, or dean.

Thesis Option

The requirement of a thesis or its equivalent is at the discretion of individual departments, programs, or schools. If a thesis is submitted, its form must be in accord with specifications stipulated in the ETD Format Guidelines. Each candidate must provide a suitable number of copies of the thesis for review and use as designated by the thesis examining committee, consisting of at least three members of the faculty recommended by the major
advisor and approved by the department chair. The final oral examination in defense of the master's thesis is conducted by the thesis committee, and a report of this examination signed by all members of the committee must be filed in the office of the dean. After the examination, the approved ETD must be deposited to the ETD Online System where it will be reviewed by the ETD Student Services Staff in the dean's office of the student's school and submitted for microfilming by Compucom and deposit in the University Library System. A receipt for the ETD processing/microfilming fees and any necessary paperwork must be submitted to the appropriate ETD Student Services Staff in the Office of the Dean.

Non-Thesis Option

It is typical for a program to require additional course work if a thesis is not required.

For the Master of Arts degree, students must acceptably describe, in writing, one or more substantial intellectual experiences or accomplishments. In programs in which a master's thesis is optional, the student must satisfy this requirement by submitting a paper (or papers), as designated by the major department, and must demonstrate competence in using methods of scholarship.

For the Master of Science degree, a paper or research project is usually required.

Regulations Pertaining to Professional Master's Degrees

The professional master's degree programs are generally similar to those for the MA and MS except that they emphasize instruction in professional affairs and practice and serve as preparation for careers in the professions. The program of study is a coherent program designed to assure the mastery of specified knowledge and skills, rather than a random accumulation of a certain number of courses. The overall form and content of the student's program of study is the responsibility of the student's department or school. To carry out this responsibility, each student must be assigned a major advisor, who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines.

Professional Master's Degree Requirements

Professional master's degrees are conferred upon those students who demonstrate comprehensive mastery of their general field of study. The professional master's degrees normally require the satisfactory completion of more than 30 credits of graduate study approved by the department. No professional master's degree program may require fewer than 30 credits. No more than one-third of the total number of required credits may be granted to a student as transfer credit for work done at another accredited graduate institution. (See Acceptance of Transfer Credits section for further detail.) At least one-half of the credits earned in a master's degree program must be at the graduate level (the 2000 or 3000 series). No courses numbered below 1000 may be applied toward graduate degree requirements. Master's degrees are conferred only on those students who have completed all course requirements with at least a 3.00 GPA.

Most professional master's degree programs provide opportunities for theoretical studies and practical applications. Students are expected to acquire professional skills through course work, projects, internships, practica, and/or research papers as part of demonstrating their comprehensive mastery of their field of study.

Requirements vary from school to school. Departments provide students with a copy of school and departmental regulations or maintain current and accurate Web sites appropriate for their programs. Students are expected to become familiar with these and to satisfy all prescribed degree requirements.

Professional master's degrees are conferred upon those students who demonstrate comprehensive mastery of the general field of study. This includes: (a) satisfactory completion of all course requirements and (b) other performances that indicate comprehensive mastery such as examinations, internships, research projects, theses, and practica. These requirements vary from school to school; students should refer to the specific requirements of their program in the Schools, Departments, and Programs section of this bulletin.

Regulations Pertaining to Doctoral Degrees

While the regulations governing doctoral study in this section represent University-wide policy, students should check the Schools, Departments, and Programs section of this bulletin and with their advisor for any expansions of or exceptions to these rules.
Admission to Doctoral Study

In some doctoral programs, the requirements for admission to graduate study and for admission to doctoral study are identical, while other programs require the completion of a master's degree or its equivalent as a prerequisite for admission to doctoral study. Admission to doctoral study does not include any implication concerning admission to candidacy for the Doctor of Philosophy degree.

Normally, only one major department of graduate study is permitted for the PhD degree. However, a few formal interdisciplinary programs and, under some circumstances, some independently designed interdisciplinary doctoral programs are available (see Interdisciplinary Doctoral Programs section).

Programs of Study

PhD programs offered at the University of Pittsburgh provide a coherent series of courses, seminars, and discussions designed to develop in the student a mature understanding of the content, methods, theories, and values of a field of knowledge and its relation to other fields. Each program trains the student in the methods of independent research appropriate to the discipline and provides an advisor and a committee to guide the student in an extended investigation of an original and independent research project of significance in the field.

The overall form and content of each student's program is the responsibility of the Graduate Faculty of the department or program. To carry out this responsibility, the departments or programs must ensure that each student has a major advisor who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines. The advisor may prescribe additional courses both within and outside the department that are essential and/or appropriate to the student's program.

Some doctoral programs may include approved areas of concentration used to define and describe the student's training and expertise within the broader discipline. Such an area of concentration is added to the transcript upon the granting of the degree.

Doctoral level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study. Normally, courses numbered below 2000 do not meet the minimum requirements for doctoral study, although they may be taken to supplement a doctoral program.

Students must maintain a minimum cumulative GPA of 3.00 in courses to be eligible to take the preliminary and comprehensive examinations as well as to graduate.

The requirement of proficiency in the use of second languages or other tools of research is at the discretion of individual departments or schools.

Departments or programs provide students with a copy of school and departmental regulations appropriate for their program and/or maintain current and accurate Web sites covering this information. In turn, students are expected to become familiar with these and to satisfy all prescribed degree requirements.

Credit Requirements

The minimum 72-credit requirement for the PhD degree is met by six terms of registration as a graduate student for 12 or more credits per term or the equivalent number of credits taken in a reduced load over a longer period of time. If the school requires completion of its master's degree program prior to admission into its doctoral program, at least four terms of registration for 12 or more credits per term or the equivalent number of credits in a reduced load are required as a minimum for the PhD degree. No more than 30 credits may be accepted for a master's degree awarded by another institution to meet the minimum credit requirement; some schools have more stringent requirements, including the Dietrich School of Arts and Sciences and the Graduate School of Public Health, both of which will accept only 24 credits for a master's degree awarded by another institution.

In recognition of graduate study beyond the master's degree successfully completed elsewhere, no more than 12 additional credits may be accepted at the time of admission to meet the minimum credit requirement. (See also Acceptance of Transfer Credits section.) No more than 30 credits may be accepted for a previously earned PhD degree in recognition of master's degree work, though some schools have more stringent requirements.

Graduate students already enrolled may, when approved in advance by their department or program and the dean, spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and transfer those credits toward the requirements for
an advanced degree at the University of Pittsburgh. In all cases, at least three terms, or 36 credits, of full-time doctoral study or the equivalent in part-time study must be successfully completed at the University of Pittsburgh.

**Residency Requirement**

Students seeking the PhD degree are required to engage in a minimum of one term of full-time doctoral study, which excludes any other employment except as approved by their departments.

**Preliminary Evaluation**

The preliminary evaluation should be designed to assess the breadth of the student's knowledge of the discipline, the student's achievement during the first year of graduate study, and the potential to apply research methods independently. The form and nature of the evaluation should be approved at the school level and described in the school bulletin. It should be conducted at approximately the end of the first year of full-time graduate study. The evaluation is used to identify those students who may be expected to complete a doctoral program successfully and also to reveal areas of weakness in the student's preparation. Evaluation results must be reported promptly to the dean's office, but no later than the last day of the term in which the evaluation occurs. A student on provisional, inactive, or special status or on probation is not eligible to take the preliminary evaluation.

**Comprehensive Examination**

The comprehensive examination should be designed to assess the student's mastery of the general field of doctoral study, the student's acquisition of both depth and breadth in the area of specialization within the general field, and the ability to use the research methods of the discipline. In some programs, the comprehensive examination is combined with the overview or prospectus meeting. It should be administered at approximately the time of the completion of the formal course requirements and should be passed at least eight months before the scheduling of the final oral examination and dissertation defense. In no case may the comprehensive examination be taken in the same term in which the student is to graduate. Examination results must be reported promptly to the dean's office but no later than the last day of the term in which the examination is administered. A student who is unable to complete all degree requirements within a five-year period after passing the comprehensive examination may be re-examined at the discretion of the department or school. A student on provisional, inactive, or special status or on probation is not eligible to take the program comprehensive examination.

**Doctoral Committee**

Before the student is admitted to candidacy for the PhD degree, the student's major advisor proposes, for the approval of the director of the school's doctoral program and the dean, a committee of four or more persons, including at least one from another department in the University of Pittsburgh or from an appropriate graduate program at another academic institution, to serve as the doctoral committee. The majority of the committee, including the major advisor, must be full or adjunct members of the Graduate Faculty. This committee must review and approve the proposed research project before the student may be admitted to candidacy. A published Graduate Faculty Membership Roster is updated three times a year.

This doctoral committee has the responsibility to advise the student during the progress of the candidate's research and has the authority to require high-quality research and/or the rewriting of any portion or all of the dissertation. It conducts the final oral examination and determines whether the dissertation meets accepted standards.

Meetings of the doctoral candidate and the dissertation committee must occur at least annually from the time the student gains admission to doctoral candidacy. During these meetings, the committee should assess the student's progress toward the degree and discuss objectives for the following year and a timetable for completing degree requirements. It is the responsibility of the dean of each school to determine a mechanism for monitoring the occurrence of these annual reviews.

The membership of the doctoral committee may be changed whenever it is appropriate or necessary, subject to the approval of the department chair, or program director and the dean.

When a doctoral committee member leaves the University, the member must be replaced unless the dissertation is almost complete or the member has an essential role on the committee. In the latter case, the dean's approval should be obtained. When the chair of a committee leaves and cannot be conveniently replaced, a cochair must be appointed from within the department, and the restructured committee requires the approval of the dean and
either the department chair or the director of the school's doctoral program. If the defense takes place within a few months of the chair's departure, the requirement of the cochair is usually waived.

Retired faculty members may remain as members or chairs of committees if they are spending considerable time in Pittsburgh or the vicinity and are still professionally active. Retired faculty who meet these criteria may also be appointed as a member or as a cochair (but not chair) of a newly formed committee. Retired faculty who leave the Pittsburgh area and/or do not remain professionally active should be replaced on committees and the revised committee approved by the dean and either the department chair or the school's director of doctoral programs.

Overview or Prospectus Meeting

Each student must prepare a dissertation proposal for presentation to the doctoral committee at a formal dissertation overview or prospectus meeting. The overview requires the student to carefully formulate a plan and permits the doctoral committee members to provide guidance in shaping the conceptualization and methodology of that plan. The doctoral committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree. Approval of the proposal does not imply either the acceptance of a dissertation; prepared in accord with the proposal or the restriction of the dissertation to this original proposal. The student is responsible for ensuring that all appropriate regulatory approvals are obtained for the proposed research. For example, if the research proposed in the overview or prospectus involves human subjects, that proposed research must be approved by the University Institutional Review Board (IRB) before it may be carried out.

Admission to Candidacy for the Doctor of Philosophy Degree

Admission to candidacy for the Doctor of Philosophy degree constitutes a promotion of the student to the most advanced stage of graduate study and provides formal approval to devote essentially exclusive attention to the research and the writing of the dissertation. To qualify for admission to candidacy, students must fulfill the following requirements:

- Be in full graduate status
- Have satisfied the requirement of the preliminary evaluation
- Have completed formal course work with a minimum grade point average of 3.00
- Have passed the comprehensive examination
- Have received approval of the proposed subject and plan of the dissertation from the doctoral committee following an overview or prospectus meeting of the committee

In some schools, admission to candidacy is a prerequisite to registration for dissertation credits. Students are informed of admission to candidacy by written notification from the dean, who also states the approved doctoral committee's composition.

Registering for Full-Time Dissertation Study

Doctoral students who have completed all credit requirements for the degree, including any minimum dissertation credit requirements, and are working full-time on their dissertations may register for Full-Time Dissertation Study, which carries no credits or letter grade but provides students full-time status. Students so enrolled are assessed a special tuition fee but are still responsible for the full-time computer and network, security/transportation, student health, and activity fees. Students must consult with the dean's office of their school for permission to register for full-time dissertation study.

Dissertation and Abstract

Each student must write a dissertation that presents the results of his or her research project. An appropriate research project involves a substantive piece of original and independent research grounded in an appropriate body of literature. The dissertation must be relevant to an identifiable field as it is currently practiced, present a hypothesis tested by data and analysis, and provide a significant contribution or advancement in that field. It is the responsibility of the student's doctoral committee to evaluate the dissertation in these terms and to recommend the awarding of the doctoral degree only if the dissertation is judged to demonstrate these qualities.

A dissertation should demonstrate the following characteristics:
The establishment of an historical context for the presentation of an innovative and creative approach to the problem, analysis, and solution

A clear understanding of the problem area as revealed by analysis and synthesis of a broad literature base

A well-defined research design

Clarity in composition and careful documentation

Results of sufficient merit to be published in refereed journals or to form the basis of a book or monograph

Sufficient detail so that other scholars can build on it in subsequent work

The preparation of the author to assume a position within the profession

If the dissertation is the result of a collaborative research effort, the project should be structured in such a way that the student's dissertation results from one clearly identified piece of work in which the student has unquestionably supplied the major effort. The contributions of the student and the other collaborators must be clearly identified.

Published articles authored by the student and based on research conducted for the dissertation study may be included in the dissertation if the student's department and school have a written policy that this is acceptable. In any case, the published work must be logically connected and integrated into the dissertation in a coherent manner, and sufficient detail must be presented to satisfy the characteristics of a dissertation. The student should be the sole or primary author of the published work. If the published articles were coauthored, the contribution of the student must be clearly delineated in the introduction so the committee can ascertain that the student's own work satisfies the requirements of a dissertation. The ETD Format Guidelines gives instructions on incorporating articles into the dissertation.

Candidates for the doctoral degree must provide a suitable number of copies of the dissertation, as determined by the doctoral committee and school policy, for review and use during the final oral examination. The general format of the dissertation and the abstract is determined by the Office of the Provost and is set forth in the ETD Format Guidelines. Specific instructions should be available in the office of the dean of the school. After the final oral examination is successfully completed, the candidate must deposit the approved ETD to the ETD Online System where it will be reviewed by the ETD Student Services Staff in the dean's office of the student's school. At least two additional copies of the dissertation abstract, a receipt for payment of the dissertation processing/microfilm fees and any necessary paperwork must be submitted to the appropriate ETD Student Services Staff in the office of the dean of the student's school. The candidate is also required to execute an agreement with Proquest Information and Learning for the publication of the dissertation on microform and in an electronic format and submit the Survey of Earned Doctorates (Forms are available in the dean's office). Students should check with their school for any additional supporting documents and/or requirements.

**Language of the Doctoral Dissertation**

The language in which doctoral dissertations are written shall normally be English. Exceptions may be granted by the student's dean with the approval of the dissertation advisor and committee, but only for sound reasons of scholarship. Permission shall never be granted on the grounds of the student's inadequate command of English.

**Final Oral Examination**

The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and need not be confined to materials in and related to the dissertation. Any member of the Graduate Faculty of the University may attend and participate in the examination. The date, place, and time of the examination should be published well in advance in the *University Times* or the *Pitt Chronicle*. Other qualified individuals may be invited by the committee to participate in the examination. Only members of the doctoral committee may be present during the final deliberations and vote on the passing of the candidate. A report of this examination, signed by all the members of the doctoral committee, must be sent to the dean. If the decision of the committee is not unanimous, the case is referred to the dean for resolution. The chair of the doctoral committee should ensure that the dissertation is in final form before requesting signatures of the members of the committee.

**Interdisciplinary Doctoral Programs**

A student may be admitted into one of two types of interdisciplinary doctoral programs, generic and individualized.

**Generic Programs**
Generic programs are ongoing, formally structured, and approved doctoral programs. Admission to these programs follows the same procedures as those of departmental programs.

**Individualized Programs**

Individualized programs are specially designed to permit an exceptionally able student who has earned a master's degree or the equivalent to pursue an interdisciplinary doctoral program structured to satisfy his or her unique goals. Such students should apply to the dean of the school if the departments involved in the proposed program are organized within one school or to the Provost if the departments are organized within more than one school. The student must satisfy the admission requirements of each of the departments or schools involved in the proposed program.

If the request is approved, the dean or the Provost, in consultation with the departments concerned, will designate five members from these departments to serve as an advisory committee. After these advisors meet with the student, a chief advisor is selected to assume responsibility for general guidance to the student. These advisors continue their responsibility until the student is admitted to candidacy for the PhD degree and may, if it is appropriate, continue as the doctoral committee for this student.

**Other Research Doctoral Degrees**

The University of Pittsburgh, through its professional schools, offers the following doctoral degrees in professional fields of study: Doctor of Education and Doctor of Public Health.

These doctoral degree programs are similar to those for the PhD in the degree of rigor required; the minimum total credit requirements and permissible transfer credits; the requirements for the successful completion of a preliminary evaluation and a comprehensive examination; the admission to doctoral candidacy; the nomination of a doctoral committee; the preparation of the dissertation and abstract; the publication of the dissertation; and the successful completion of the final oral examination. These doctoral dissertations are usually based on an in-depth empirical research project by the student and are intended to permit the student to apply relevant theory and knowledge as well as to demonstrate skills in analysis of a major problem and to contribute to the improvement of practice in the student's area of specialization.

**Other Professional Doctoral Degrees**

The University of Pittsburgh also offers professional doctoral degree programs for practitioners, including the JSD (Law), DNP (Nursing), AuD (Audiology), DPT (Physical Therapy), PharmD (Pharmacy), and CScD (Clinical Science). These programs provide a coherent curriculum designed to impart the mastery of a substantial and complex body of knowledge that will serve as preparation for leadership and excellence in the practice of the profession. The curriculum should contain a research component to achieve the goal for the research competence of the graduate. Students should deliver a report based on research that demonstrates both mastery of their subject matter and a high level of communication skills. The curriculum should contain an internship, a practicum or a clinical component. Each experience should have associated with it clear goals and objective, a statement of what skills the student should master, at statement how those skills will be assessed objectively by the academic program, and what steps the program will take in response to those assessments. In addition, the program should have an objective way to evaluate the site where internships and/or clinical rotations take place and assure the expertise of those responsible for administering training and instruction. If the program is an accredited program, the standards of the accrediting body for a professional doctorate must be met.

To attain the depth of knowledge and experience required by someone earning a doctorate, a minimum nine semesters of full-time study is required. Of this no more than one-third should be internships or clinical work. A comprehensive examination will be used to assess the student's mastery of a substantial and complex body of knowledge.

The minimum admission requirements must be the same as for all graduate programs at the University of Pittsburgh. In addition, the student must have completed a defined set of prerequisites so that all students will enter with required basic knowledge. A student must attain a 3.00 GPA in order to maintain good standing and be graduated.

**Statute of Limitations/Leaves of Absence**

The purpose of the statute of limitations is to ensure that a graduate degree from the University of Pittsburgh represents mastery of current knowledge in the field of study. Individual schools within the University may adopt policies that are more stringent, but not less, than those stated here.
All requirements for MA and MS degrees must be completed within a period of four consecutive calendar years from the student's initial registration for graduate study; all professional master's degrees, within five years. Dual degrees and joint degrees that require course work in excess of 50 credit hours may be granted a longer statute of limitations by the University Council on Graduate Study.

From the student's initial registration for graduate study, all requirements for the PhD degree must be completed within a period of 10 years, or within eight years if the student has received credit for a master's degree appropriate to the field of study. A student who is unable to complete all degree requirements within a five-year period after passing the comprehensive examination may be re-examined at the discretion of the department or school. Programs for professional doctoral degrees, for which the majority of candidates pursue part-time study while working full-time within their chosen disciplines, may be granted a longer statute of limitations by the schools offering the degrees.

Under exceptional circumstances, a candidate for an advanced degree may apply for an extension of the statute of limitations. The request must be approved by the department or departmental committee (master's or doctoral) and submitted to the dean for final action. Requests for an extension of the statute of limitations must be accompanied by a departmental assessment of the work required of the student to complete the degree as well as documented evidence of the extenuating circumstances leading to the requested extension. Students who request an extension of the statute of limitations must demonstrate proper preparation for the completion of all current degree requirements.

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of two years may be granted to doctoral students or one year to master's students. The length and rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Graduation

Requirements for Graduation

Graduation requirements for MA, MS, professional master's, and doctoral degrees are described earlier in this bulletin under the relevant sections detailing the regulations pertaining to each degree. In order to graduate from the University of Pittsburgh, a graduate student must be an active University of Pittsburgh student registered for at least 1 credit or full-time dissertation study within the past 12 months. See specific schools and programs for detailed information on degree and graduation requirements.

Application to Graduate

Students must file an application for graduation in the dean's office of their school early in the term in which graduation is expected. Each school establishes its own deadline by which students must apply for graduation. Students should check with their dean's office for the deadline. As noted above, students must be active. In exceptional circumstances, students who complete all the degree requirements at the end of a term but graduate in the next term may petition the dean of the school for a waiver of this registration requirement. The requirement that a student be on active status cannot be waived.

Prior to the end of the term in which they graduate, all doctoral candidates must submit to the dean's office a completed Survey of Earned Doctorates.

Certification for Graduation

The Graduate Faculty of the department or program evaluates the performance of the student. If that performance is satisfactory, a report should be submitted to the dean certifying that the candidate has satisfactorily completed all departmental requirements for a graduate degree. The dean, after confirming that the overall school and University requirements have been met, certifies the candidate for graduation.

Commencement

Candidates for graduation are encouraged to appear in person at the Annual Commencement Convocation, usually held the Sunday after the spring term ends. Although the degree is officially conferred at commencement, diplomas are mailed to graduates several weeks later.
Rights and Responsibilities

The University has a number of official policies affecting students. For complete and current text on all University policies, please see www.provost.pitt.edu/information-on/guidelines.html.

The information below summarizes several key University-wide policies affecting graduate students, but students are also responsible for being cognizant of those University, school, and departmental regulations relevant to their programs of study.

Academic Integrity Policy

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. Individual schools have their own academic integrity policies, and students are encouraged to review these school-specific guidelines as well.

Affirmative Action and Non-Discrimination Policy

The University of Pittsburgh, as an educational institution and as an employer, values equality of opportunity, human dignity, and racial/ethnic and cultural diversity. Accordingly, the University prohibits and will not engage in discrimination or harassment on the basis of race, color, religion, national origin, ancestry, sex, age, marital status, familial status, sexual orientation, disability, or status as a disabled veteran or a veteran of the Vietnam era. Further, the University will continue to take affirmative steps to support and advance these values consistent with the University's mission. This policy applies to admissions, employment, and access to and treatment in University programs and activities. Additional information on this policy is available at http://cfo.pitt.edu/policies/documents/policy07-01-03web.pdf.

Computing Use Policy

Every member of the University community has two basic rights regarding computing: privacy and a fair share of resources. It is unethical for another person to violate these rights. All users, in turn, are expected to exercise common sense and decency with regard to the campus computing resources. Please read Acceptable Computing Access and Use, available in campus computing labs or online at technology.pitt.edu/security/acceptable-computing-access-and-use for details.

Students should realize that any misuse of computing resources may result in the suspension of their computing privileges.

Copyright Policy

The University of Pittsburgh affirms that, except as specifically exempted by this policy, faculty, staff, and students are entitled to claim copyright ownership, including worldwide rights, in the following works authored by them: books, articles, educational course work, similar works that are intended to disseminate the results of academic research or scholarly study, popular fiction or nonfiction works, poems, musical compositions, and other works of artistic imagination.

The University has no proprietary interest in copyrightable materials produced by faculty, staff, or students under contract with entities external to the University (in which the faculty, staff, or students have no controlling or majority interest), except as specifically exempted by this policy.

Additional information on this policy is available at http://cfo.pitt.edu/policies/documents/policy11-02-02.pdf.

Drug-Free School and Workplace Policy
The University of Pittsburgh prohibits the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance on University property or as part of any University activity. Faculty, staff, and students of the University must also comply with the laws of the Commonwealth of Pennsylvania on the possession and consumption of alcohol.

Violation of this policy will result in disciplinary action within 30 days, including, but not limited to, a warning, written reprimand, suspension, dismissal, expulsion, and/or mandatory participation and successful completion of a drug abuse assistance or rehabilitation program approved by an appropriate health or law enforcement agency.

Any University employee paid from federally funded grants or contracts, or any students participating in any federally funded or Guaranteed Student Loan program, must notify the University of any criminal drug statute conviction for a violation occurring at the University or while engaged in University activities.

For complete text on this policy, see http://www.hr.pitt.edu/sites/default/files/uploads/DFW/DFW-FY2014.pdf.

E-mail Communication Policy

The University of Pittsburgh has established e-mail as an official means of communication with students. For more information, visit http://www.cfo.pitt.edu/policies/policy/09/09-10-01.html.

Faculty-Student Relationships

The University's educational mission is promoted by professional relationships between faculty members and students. Relationships of an intimate nature (that is, sexual and/or romantic) compromise the integrity of a faculty-student relationship whenever the faculty member has a professional responsibility for the student. The University prohibits relationships between a faculty member and a student whose academic work, teaching, or research is being supervised or evaluated by the faculty member.

If an intimate relationship should exist or develop between a faculty member and a student, the University requires the faculty member to remove himself or herself from all supervisory, evaluative, and/or formal advisory roles with respect to the student.

Definition Note: In this policy, the definition of "faculty member" refers to anyone appointed by the University as a teacher, researcher, or academic administrator, including graduate and undergraduate students so appointed. For complete text on this policy, see http://www.cfo.pitt.edu/policies/policy/02/02-04-03.html.

Family Educational Rights and Privacy Act

In compliance with the Family Educational Rights and Privacy Act of 1974, the University guarantees that students have the right to inspect all personally identifiable records maintained by the institution and may challenge the content and accuracy of those records through appropriate institutional procedures. It is further guaranteed by the University that student records containing personally identifiable information will not be released except as permitted by the Family Educational Rights and Privacy Act. See www.registrar.pitt.edu/ferpa.html for more information.

Graduate Student Researcher Policy Statement

Graduate student researchers (GSRs) at the University of Pittsburgh are graduate students who are receiving financial support from research funds in return for duties performed to meet the goals for which the funds were awarded. The research performed is also normally an integral part of the student's research practicum experience, thesis, or dissertation. A primary goal of the appointment, from the point of view of both the University and the student, is to provide financial support to the graduate student. For additional Graduate Student Researcher Policy information see www.pitt.edu/~graduate/gsr.html.

Harassment Policies
Harassment

No University employee, student, or individual on University property may intentionally harass or abuse a person (physically or verbally) with the purpose or effect of unreasonably interfering with such person's work or academic performance, or of creating an intimidating, hostile, or offensive work or academic environment.

Sexual Harassment

The University of Pittsburgh is committed to the maintenance of a community free from all forms of sexual harassment. Sexual harassment violates University policy as well as state, federal, and local laws. It is neither permitted nor condoned.

It is also a violation of the University of Pittsburgh's policy against sexual harassment for any employee or student at the University of Pittsburgh to attempt in any way to retaliate against a person who makes a claim of sexual harassment.

Any individual who, after thorough investigation and an informal or formal hearing, is found to have violated the University's policy against sexual harassment, will be subject to disciplinary action, including, but not limited to, reprimand, suspension, termination, or expulsion. Any disciplinary action taken will depend upon the severity of the offense. For more information, see http://www.cfo.pitt.edu/policies/documents/policy06-05-01web.pdf.

Human Research Subjects: Institutional Review Board

The University of Pittsburgh is guided by the ethical principles regarding all research involving humans as subjects, as set forth in the report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (entitled Ethical Principles and Guidelines for the Protection of Human Subjects for Research [the "Belmont Report"]).

All research at the University involving interventions or interactions with living individuals or the obtaining of their identifiable private information must be reviewed and approved by an Institutional Review Board (IRB) before the research will be allowed to proceed. For complete text of the IRB's policies and practices, see www.irb.pitt.edu or contact the IRB at 412-578-3424.

Patent Policy

A University student, during the student's period of enrollment, may be responsible for new discoveries and inventions that could have commercial value and contribute to scientific, technological, social, and cultural progress. Those accomplishments should be patented in the best interest of the student, the University, the public, and the government. The University's policy on patents determines the rights and obligations of the student and the University in any technology the student may invent while enrolled in the University. Details of this University policy are available from the Office of Technology Transfer and Intellectual Property at 200 Gardner Steel Conference Center and at http://www.cfo.pitt.edu/policies/policy/11/11-02-01.html.

Research Integrity

The University of Pittsburgh seeks excellence in the discovery and dissemination of knowledge. Excellence in scholarship requires all members of the University community to adhere strictly to the highest standards of integrity with regard to research, instruction, and evaluation. Research misconduct carries potential for serious harm to the University community, to the research of science, and to society as a whole. The University's Research Integrity Policy is available online at http://www.cfo.pitt.edu/policies/policy/11/11-01-01.html.

Smoking Policy
Smoking is prohibited in all University-owned and leased facilities, including residence halls and off-campus housing facilities, and in all University vehicles, including motor pool vehicles, campus buses, and vans, with explicit limited exceptions described in http://www.cfo.pitt.edu/policies/policy/04/04-05-03.html.

**Student Code of Conduct**

The Student Code of Conduct is an outline of the non-academic rights and responsibilities of University students. The code defines offenses against students. A student or University official may file a complaint of violation of the Student Code of Conduct at the University Student Judicial System Office. For a copy of the code, please contact the Judicial System Office in 738 William Pitt Union at 412-648-7918 or see www.studentaffairs.pitt.edu/studentconduct.

**Student Code of Judicial Procedures**

The Office of the University Student Judicial System coordinates the Campus Judicial Board. It also receives, previews, and acts upon complaints of violations of the Student Code of Conduct. Its purpose is to provide due process and fair treatment in adjudicating charges filed for violations of the code. All complaints should be filed here.

Judicial Affairs also conducts a Student Mediation Program and screens requests for contact of students.

**Student Service Holds Policy**

Access to many student services including registration and receipt of grades may be delayed for a number of reasons ranging from financial liability to missing data. Complete information on this policy is available online at http://www.cfo.pitt.edu/policies/policy/09/09-04-09.html.

**Teaching Assistant/Teaching Fellow/Graduate Student Assistant Policy Statement**

Teaching assistants (TAs), teaching fellows (TFs), and graduate student assistants (GSAs) at the University are graduate students who are receiving support in return for specified duties while gaining teaching and teaching-related experience under the guidance of faculty mentors. Their primary objective, from the standpoint of the University and the individual, is to make steady progress toward an advanced degree. TA/TF/GSA appointment status is dependent upon graduate student status. The complete policy statement for TA/TF/GSAs is available at www.pitt.edu/~graduate/tapolicyrev.htm.

**Use of Alcohol Policy**

The University of Pittsburgh prohibits use and dispensing of alcohol in compliance with the laws of the Commonwealth of Pennsylvania. For more information, visit http://www.cfo.pitt.edu/policies/policy/04/04-05-02.html.
Regulations Governing Graduate Study at the University of Pittsburgh

History of Graduate Study at the University of Pittsburgh

The recognition of graduate study at the University of Pittsburgh began with the awarding of Master of Arts degrees-two in 1836, one in 1845, three in 1848, and two in 1849. The record does not distinguish between earned and honorary degrees, but apparently 33 MA degrees had been awarded by 1870. These degrees were conferred for study beyond the Bachelor of Arts degree and before specific programs or minimum requirements for advanced degrees had been established.

This system continued until 1884 when Chancellor Goff set up a two-year professional study program leading to a Master of Philosophy or a Master of Arts degree and a three-year program leading to a Doctor of Philosophy degree. Before admission to these graduate programs, each student was required to show proficiency in three areas of study as tested by written and oral examinations. For admission to the Master of Arts program, each student was required to have completed the four-year Bachelor of Philosophy degree in the Scientific course. The Master of Philosophy degree was, in fact, the predecessor of the Master of Science degree. Students were permitted to study in absentia under the direction of the faculty, but were required to submit annually to a rigorous examination in all prescribed courses. In addition, both master's and doctoral candidates were required to prepare and defend theses.

Between 1885 and 1903, there were 25 Master of Philosophy, 34 Master of Arts, and ten honorary Master of Arts degrees awarded. Apparently, no Master of Philosophy degrees have been awarded since 1903. Three Doctor of Philosophy degrees were awarded in 1886 and a total of 31 had been conferred by 1915. Between 1888 and 1900 ten honorary Doctor of Philosophy degrees were awarded, but apparently none have been awarded since then.

In 1906, new rules were formulated for graduate study, requiring students to be in attendance and requiring the completion of one year of study or 30 credits for the master's degree and three years or 90 credits for the doctoral degree.

The catalogues of 1908 and 1909 announced the establishment of the Graduate School with five departments (Psychology and Education, English Literature, Chemistry, History and Political Science, Economics and Sociology) offering courses for the Doctor of Philosophy degree, and these plus five additional departments (Biblical Literature and Comparative Religion, Greek, Semitic Languages and Literatures, Biology, and Astronomy) offered courses for the Master of Arts degree. The program of studies for the MA degree required one major and a minor subject and the program for the PhD degree required one major and one or two minor subjects, one of which must be from outside the department of the major. A good reading knowledge of at least one modern foreign language was required to receive a graduate degree.

Three Master of Science degrees were awarded in 1907 although the first description of the Master of Science degree appeared in the 1910 catalogue: "The Master of Arts degree will be granted only upon completion of a course mainly literary in character; the degree of Master of Science after one mainly scientific." That catalogue lists 16 departments offering courses for master's degrees and ten offering courses for the Doctor of Philosophy degree. The language requirement became more specific: "A good reading knowledge of both French and German and of other modern languages necessary to carry on graduate work is required of each candidate for the PhD" and "of French or German, or both, for Master's degrees."

In 1910, a faculty committee drafted proposals, adopted by the Board of Trustees in 1913, making the Graduate School an independent administrative unit of the University and authorizing the selection of a Graduate Council. This Council was first appointed by the Dean of the Graduate School and later elected by the Graduate Faculty from the departments offering graduate work. It consisted of representatives from the nine departments offering graduate work at the time: education, economics, ancient languages, romance languages, chemistry, botany, mathematics and physics, geology, and physiology. In 1924, a change in procedure for the selection of the Council was instituted so that 13 faculty representatives were drawn from the following groups of departments: English, fine arts, foreign languages, physical sciences, natural sciences, social sciences, psychology, engineering, business administration, medicine, dentistry, and education.

In 1947 the Board of Trustees adopted resolutions recommended by the University Senate and the Graduate Council (1) grouping the schools and departments in the Graduate School into three divisions: the Humanities, the Social Sciences, and the Natural Sciences; (2) establishing criteria for membership in the faculty of the Graduate School; and (3) defining the Graduate Council and its functions as follows: "The Graduate Council shall consist of 12 full members of the faculty of the Graduate School, four from each of the three divisions of the Graduate School, and the Dean of the Graduate School as chairman, ex officio; the faculty members of the Council shall be elected by the full members of the faculty of the Graduate School of their respective divisions for a term of four years; and the Graduate Council representing the faculty of the divisions, shall be the policy-making body of the Graduate School."
Until 1956, the administration of graduate study was the responsibility of the Dean of the Graduate School and the Graduate Council. At that time, the individual schools and the three Divisions of the Academic Disciplines were given direct administrative responsibility for their graduate programs in accord with the regulations established by the University Council on Graduate Study—formerly the Graduate Council.

In 1968, the Dean of the Graduate School retired from his administrative role and the position he had held was discontinued. General responsibility for the University's graduate programs was assigned to the Provost pending reorganization of the University's graduate structure. The University Council on Graduate Study, the University Administration, and members of the Graduate Faculty cooperated in drafting a proposed reorganization of Graduate Study which was approved by written ballot by the entire Graduate Faculty, and in turn, accepted by Chancellor Posvar. This organizational structure became effective July 1, 1971 and is still the official structure. The procedures for nomination and appointment to the Graduate Faculty were approved in 1972 and revised slightly in 1977.

Thus, since the University's founding in 1787, graduate education has grown to encompass the School of Arts and Sciences and all 13 of the professional schools, which share a commitment to meet the nation's need for well educated researchers, scholars, and leaders of professions and the tri-state region's need for trained professionals.

Organization of Graduate Study at the University of Pittsburgh

Objectives

The first objective is to place the responsibility for planning and operating graduate programs in the schools and faculties which offer such programs. This arrangement will put the graduate student and his or her program under the immediate supervision of the teaching staff and administrative officers of his or her field of study.

The second objective is to provide a means of establishing and maintaining basic standards and requirements for graduate work throughout the University. It is believed that the advanced degree programs developed and administered by the various schools and faculties, though differing in details, should conform to certain fundamental principles of good practice.

The third objective is to create effective channels of communication within the graduate community and thus to ensure that all segments of the University are represented in the policy making process.

Definitions

Graduate programs: all programs of study leading to a master's degree, an advanced doctoral degree (e.g. PhD, EdD, DPH), or a graduate certificate.

Advanced degrees: all master's and doctoral degrees awarded upon completion of graduate degree programs as defined above.

Schools: academic units of the University headed by deans, having their own teaching staffs, and offering instructional programs leading to degrees. Interschool programs: programs of graduate instruction and research offered cooperatively by Graduate Faculty members from two or more of the academic units defined above.

Graduate Faculty: members of the various schools who have been recognized and approved as qualified: (1) to teach courses carrying graduate credit, (2) to serve on examining committees for advanced degrees, and (3) to advise graduate students and direct their research.

Graduate student: a student who is enrolled in a graduate program as defined above.

Structure

I. Administration of Graduate Programs
Although the University Council on Graduate Study, acting for the Graduate Faculty, establishes minimum standards for graduate work throughout the University (III.B.1), the immediate responsibility for developing and administering graduate programs is assigned to the deans and Graduate Faculty members of the schools. This responsibility applies both to the traditional MA, MS, and PhD programs and to programs leading to advanced professional degrees. Specifically, the deans and Graduate Faculty members shall be responsible in their areas for graduate admission standards and requirements and the admission of graduate students; for advanced certificate and degree requirements; for selecting and maintaining a distinguished graduate faculty; and for recommending the awarding of advanced certificates and degrees.

The Provost shall have responsibility for the general supervision of graduate programs throughout the University, giving leadership to the deans and faculties in maintaining high standards of graduate instruction and research.

The Provost or a Vice Provost as may be designated shall serve as the administrative officer of the Graduate Faculty (see V.B., below).

II. The Graduate Faculty

FM Members of the graduate faculty have been recognized and approved as qualified to teach courses carrying graduate credit, to serve on examining committees for advanced degrees, and to advise graduate students and direct their research.

1. Membership in the Graduate Faculty shall be of two classes, "Regular" and "Adjunct." Regular membership shall be recommended for full-time faculty members or part-time, tenure stream members of the University faculty who are approved to direct graduate study and research at all levels. Adjunct membership shall be recommended for persons whose primary responsibility is outside the University but who hold a part-time faculty appointment and are approved to direct graduate study and research at all levels. Only Regular members shall be eligible for election to the University Council on Graduate Study, and only Regular members may cast votes in such elections.

2. Members shall be appointed to the Graduate Faculty by the Provost. When a person is recommended for initial appointment to a faculty position, the dean who makes the recommendation will indicate whether, on the basis of an appraisal by a departmental or other appropriate faculty group, the individual should be given Graduate Faculty status. A recommendation for Graduate Faculty membership will carry the implication that the prospective appointee is judged to be: (1) competent in graduate instruction and the supervision of student research and (2) active in advancing knowledge through his or her own research. If approved for Graduate Faculty status, a full-time appointee will become a "Regular" member. A highly qualified part-time appointee whose main employment is outside the University will become an "Adjunct" member. The official contract letter from the Provost to the new faculty member will specify the class of Graduate Faculty membership, if any, that has been awarded.

3. Members shall perform the following functions:
   1. Provide instruction, conduct examinations, and direct student research in graduate programs; and
   2. Serve on faculty committees and councils charged with the development of graduate programs and policies.

4. Prior to Council's taking final action, all legislation must be sent to the deans and the chairs of schools' graduate councils, who will distribute it to appropriate councils and to Graduate Faculty and forward comments back to Council. All members of the Graduate Council shall receive from the chair of the University Council on Graduate Study an annual report of actions taken by Council. On the recommendation of the Council or the Provost or on receipt by the Provost of a request signed by 30 Regular members of the Graduate Faculty, legislation approved by Council which reflects a major change in policy shall be submitted for approval by a mail ballot to all members of the Graduate Faculty. If the proposed legislation is approved by a majority of the members responding within a 30-day period following the mailing of ballots, it will be considered to be approved for recommendation to the Chancellor.

5. All members shall be given notice of meetings of the University Council on Graduate Study through the University Times or other appropriate announcements. They shall be entitled to attend such meetings and to speak, but shall not be permitted to vote unless they are members of the Council.

III. The University Council on Graduate Study

1. Membership
   1. Provost,
   2. Vice Provosts as designated by the Provost, and
   3. Twenty-one Regular members of the Graduate Faculty, distributed according to a formula based on the number of Regular Graduate Faculty members in the schools (one representative for each 100 members and/or fraction of 100). The representation is as follows:
   - School of Arts and Sciences
   - Humanities-one representative
   - Natural Sciences-one representative
   - Social Sciences-one representative
   - At Large-two representatives
   - Joseph M. Katz Graduate School of Business-one representative
Faculty FMFM representatives shall be selected, and their terms of office determined, in accordance with procedures established for this purpose within their respective schools. No representative shall serve for more than four consecutive years, except when a school chooses to designate a representative by reason of the official role of that individual in relation to graduate study within that school.

4. A maximum of six graduate students shall be chosen as representatives in accordance with procedures established for that purpose by the Graduate and Professional Student Association. Academic units which are not directly represented by a student with voting rights on the University Council on Graduate Study may choose one student observer to attend Council meetings with the privilege of speaking but not voting.

2. Functions
1. To develop basic standards, regulations, and policies applicable to all fields for graduate instruction and research;
2. To transmit to the Chancellor legislation originating in the Council after such legislation has been reviewed by the subordinate faculty councils or committees (see IV.A.), and has been submitted to the Graduate Faculty, or has been approved by a majority of those members responding by a mail ballot (see II.D.);
3. To review, evaluate, and make recommendations to the Chancellor concerning proposals for new postbaccalaureate degree and certificate programs throughout the University after such proposals have had prior review and approval by the faculty councils or committees in which the proposals originated, or in the case of interschool proposals, by the councils or committees of all the areas involved (see IV.A., B.);
4. To keep informed regarding the quality of graduate work throughout the University by receiving annual reports from the faculty councils and committees on the current status of all graduate degree and certificate programs within their respective areas, and, when necessary, to conduct its own review of such programs; and
5. To identify and promote creative new approaches to graduate education, whether in defining fields of study, program structure, course content, behavioral objectives, research goals, or other aspects.

3. Procedures
1. The Council shall hold eight monthly meetings during the academic year. Additional special meetings may be called by the Provost or a designated Vice Provost.
2. The Council may appoint ad hoc committees from its own membership or from the Graduate Faculty as a whole to review proposals for new postbaccalaureate degree programs, to evaluate existing programs, or to make such other studies as the Council considers desirable. Each such committee shall include at most two graduate student representatives. The committees may also, at the option of the Council, make use of consultants from outside the University. When formed to evaluate new programs which require substantial library holdings, or computer usage, the review committees shall include one or more representatives of the University Libraries or Computing Services and Systems Development.
3. Prior to Council's taking final action, all legislation must be sent to the deans and chairs of schools' graduate councils, who will distribute it to appropriate councils and to Graduate Faculty and forward comments back to Council.
4. All decisions made by the Council shall be communicated to the faculty, students, and administrative officers of the University.

IV. Faculty Councils and Committees on Graduate Study

1. Faculty councils and committees on graduate study in the various schools shall be responsible for standards and requirements in their respective areas and for reporting on programs and policies to the University Council on Graduate Study.
2. Committees may be formed to supervise interdepartmental and interschool graduate programs. If an interdepartmental program is established within a particular school, the committee in charge of that program will perform those functions normally performed by a department. If the program has broader scope than that of a single school, the committee structure and administrative relationships will be those agreed upon by the cooperating units. Graduate programs will be reviewed by the University Council on Graduate Study and by the Provost.
The basic standards, regulations, and policies approved by the University Council on Graduate Study shall be regarded as minimal standards by the various councils, committees, and faculties.

V. Functions of Administrative Officers in Relation to Graduate Study

1. Deans of Schools
   1. Provide leadership in the development of programs, standards, policies, and facilities for graduate instruction and research in their areas;
   2. Administer the operation of graduate programs in their areas, including admissions, student counseling, record keeping, enforcement of requirements, and recommendation of candidates for advanced degrees; and
   3. Select and maintain a Graduate Faculty of the first quality and encourage the professional growth of its members.

2. Provost or a Vice Provost as Designated
   1. Serves as administrative officer of the Graduate Faculty and Chair of the University Council on Graduate Study;
   2. Represents the central administration in developing, reviewing, and evaluating graduate programs throughout the University;
   3. Reviews the adequacy of the structure for graduate instruction and research and identifies opportunities for improving the structure;
   4. Observes and reports the extent to which the several faculties are complying with the Graduate Faculty's standards for graduate study;
   5. Encourages the development of graduate programs which involve interschool collaboration;
   6. If a designee, advises the Provost regarding appointments to the Graduate Faculty;
   7. Administers graduate fellowship programs which cannot be assigned to specific schools;
   8. Serves as liaison officer between the University and the various professional organizations and other agencies which are concerned with graduate work on the national level;
   9. Keeps informed of developments in graduate education and postdoctoral study at other graduate institutions;
   10. Fosters research and innovation related to graduate study; and
   11. Sees that bulletins, catalogues, and other materials describing the University's graduate programs are published and distributed.

3. Provost
   1. Represents the Chancellor in developing, reviewing, and evaluating graduate programs throughout the University;
   2. Cooperates with deans and department chairs in maintaining a graduate faculty of superior competence, approves appointments to the Graduate Faculty as recommended by the deans, and observes the quality of graduate instruction and research within the several schools; and
   3. Serves as a member of the University Council on Graduate Study.

4. Chancellor
   1. As chief administrative officer, reviews proposals of the University Council on Graduate Study and is responsible for final decisions regarding the structure of graduate instruction and research;
   2. Recommends University Council on Graduate Study proposals for new degrees to the Board of Trustees for final action; and
   3. Confers graduate degrees recommended by the Graduate Faculty of the several schools and approved by the Board of Trustees.

VI. Amendments

Amendments to this plan of organization may be proposed by the University Council on Graduate Study, by joint action of two or more of the faculty councils or committees, or by petition of 50 Regular members of the Graduate Faculty drawn from two or more schools. A proposed amendment shall be regarded as new legislation and shall be handled in accordance with the procedures outlined in Section II.D.

Nomination and Appointment to the Graduate Faculty

I. Qualifications for Membership in the Graduate Faculty

According to the 1971 reorganization of Graduate Study at the University of Pittsburgh, "membership in the Graduate Faculty shall be of two classes, 'Regular' and 'Adjunct.'" Regular membership shall be recommended for full-time faculty members or part-time, tenure stream members of the University faculty or academic staff with faculty status who are approved to direct graduate study and research at all levels. Adjunct membership
shall be recommended for persons whose primary responsibility is outside the University but who hold a part-time faculty appointment and are approved to direct graduate study and research at all levels.

The competence to direct graduate study and research at all levels is the primary qualification for membership in the Graduate Faculty. Hence, each nomination for membership should include documentation of the candidate's experience in research, in the teaching of graduate level courses, in the supervision of graduate research, as well as in scholarly publications and professional employment. The completion of a doctoral dissertation, while highly desirable, is not in itself sufficient evidence of qualification for membership in the Graduate Faculty. At the same time, faculty members without an earned doctorate are not automatically excluded and may be designated if they have exceptional qualifications by virtue of experience and accomplishment.

Appropriately qualified faculty members who are not either Regular or Adjunct members of the Graduate Faculty may be assigned by their department chairs (if approved by the Graduate Faculty of the department) the responsibility for the teaching of graduate courses and the direction of master's level research. In addition, they may serve on doctoral dissertation committees provided that a majority (three or more) of the committee are Regular or Adjunct Graduate Faculty members. These responsibilities provide some of the experience required for later appointment to membership in the Graduate Faculty. Individuals who are candidates for advanced degrees, and especially those seeking a degree from the University of Pittsburgh, do not normally qualify for membership on doctoral dissertation committees and, except in a few professional areas, they should not normally be assigned the responsibility for the teaching of graduate courses.

II. Procedure for Nomination

All FE nominations for Regular or Adjunct membership in the Graduate Faculty must originate in the department or school offering graduate degree programs. All Regular Graduate Faculty members in the department, school, or unit must be polled, and the nomination must be signed by at least six of the Graduate Faculty members, the department chair, and the dean of the school making the nomination. If there are fewer than six Graduate Faculty members in the unit, additional support (including signatures) should be obtained from the Graduate Faculty members in closely related areas of the University.

The Graduate Faculty of any school may determine appropriate discipline sub-clusters to act on nomination procedures, if the total faculty so desire.

If a department or school nominates for Regular membership in the Graduate Faculty, an individual whose primary appointment is in another department, the nomination must include the concurrence of the department of primary appointment.

All nominations for Regular or Adjunct membership in the Graduate Faculty should be submitted on the appropriate form. The required supporting evidence should include a listing of graduate courses taught, service on graduate committees, research supervised, and scholarly publications.

III. Appointment to the Graduate Faculty

Appointment to membership in the Graduate Faculty is made by the Provost of the University.

The Provost utilizes a standard procedure for review of all nominations before final approval and appointment. This review is based upon the qualifications to teach and direct graduate research at all levels in accord with the objectives of the degree programs.

Authority and Responsibility

Authority of the Graduate Faculty

The Graduate Faculty of the University, acting through the University Council on Graduate Study, establishes general regulations and minimal requirements for graduate degrees throughout the University. This responsibility applies to the traditional MA, MS, and PhD degree programs as well as to advanced professional degrees and graduate certificates, except for the first professional degree programs in Medicine, Dental Medicine, Pharmacy and Law. The Provost has final authority in the interpretation and application of the regulations established by the University Council on Graduate Study.
The Graduate Faculty of each department or school establishes the requirements for degrees earned under its jurisdiction provided these requirements are in accord with those established by the University Council on Graduate Study. The dean of each school has final authority in the interpretation and application of these additional requirements and/or regulations.

Responsibility

Each department or school with a graduate program is expected to: (1) establish and maintain a high quality graduate program appropriate for its discipline and in accord with the regulations established by the University Council on Graduate Study; (2) provide each graduate student with a written copy of the regulations concerning graduate study and the requirements for advanced degrees; and (3) designate a faculty member (or a committee) to advise each graduate student concerning all aspects of the graduate program and provide for a thesis or dissertation adviser and the appropriate committees.

Each graduate student is expected to become familiar with the general regulations concerning graduate study and with the specific regulations of his or her major department of graduate study and to accept responsibility for the completion of degree requirements as prescribed.

Admission and Registration

Application

An inquiry from a prospective student concerning graduate study should receive from the department or school a prompt response that includes a description of the program(s), the necessary application forms or information about applying online, and instructions concerning the completion of all forms, including the Application Data form.

The applicant is expected to:

1. Complete the online application and submit the application fee through the online payment system. If the applicant submits a paper application, he or she should return to the department or school the completed application forms and a check (not cash) for the application fee payable to the University of Pittsburgh. This fee is required of all applicants and is non-refundable. It does not apply toward the payment of tuition.
2. Request the registrars of all undergraduate and any graduate schools attended to send official transcripts of their records to the department or school of intended graduate study.
3. Submit any additional material required by the department or school and, if available, other evidence of academic and personal qualifications for graduate study. These materials may include any or all of the following: scores achieved on standardized examinations such as the Graduate Record Examination or the Miller Analogies Test, letters of recommendation, term papers written during previous study, evidence of relevant work/life experience, evidence of motivation for graduate study, and a statement of career objectives.
4. Arrange for a personal interview if requested by the department or school.

No action should be taken on an application for admission to graduate study until the department or school has received: (1) the completed application form; (2) the application fee; (3) official transcripts of all work done in undergraduate and graduate schools; and (4) supporting materials as required by the department or school. (Under the Admission Status section, see Special Status for circumstances in which a student may be granted temporary admission.)

Each department or school has the responsibility to establish deadline dates both for receipt of application for admission and for application for fellowships, assistantships, or other forms of aid and to notify prospective applicants of these dates. A department or school may limit admission to a specific term only or may allow admission in any of the three terms. Each department or school is obligated both to act promptly on completed applications, if submitted before the established deadline date, and to give a thorough and fair review of each completed application. Decisions regarding admission should be based on an overall evaluation of all the credentials submitted by the candidate, and be in accord with the availability of faculty, facilities, and student support necessary to meet the applicant's expressed academic and research needs and interests. Applicants should be notified promptly of decisions concerning their applications. Many departments or programs have a limited number of places available. In cases where the number of qualified applicants exceeds the number of places available, applicants should be judged competitively.

If a department or school so approves, a student may defer admission for one year without having to complete any additional applications. If approved, the student is sent a new admission letter. Additional course work taken during the deferred year and a new affidavit of financial support should also accompany any financial aid request. The deferral of admission is independent of financial aid.
Officially, admission may be granted or denied only by the dean of the school, and the issuance of visa documents may be granted or denied for non-academic reasons only by the Office of International Services. Registration is permitted only after admission is granted.

Changing the Field of Graduate Study

A student already admitted to graduate study and desiring to change a major department of graduate study must file an application for such a change in the office of the dean or the department of the school the student wishes to enter. The application for admission to the new department should be evaluated in the same manner as an application from a new student.

Admission Status

Acceptable students are admitted to graduate study in a specific department or school with "full," "provisional," or "special" graduate status depending on their qualifications and objectives. The qualifications described below represent the minimum standards of the University. These may be made more stringent or specific at the option of the department or school.

**Full Graduate Status:** For admission to full graduate status, an applicant must be a graduate of an accredited U.S. college or university and must be considered qualified for advanced study by the department or school. International applicants must meet the admissions guidelines described under "Admission of Students from Other Countries." Qualification for advanced study normally is demonstrated by a B average (a grade point average of 3.00 on a 4.00 scale) or better in the total undergraduate program. If students with less than a B average present alternative evidence (such as completion of an advanced degree or successful relevant work experience) of superior ability, they may be considered for full graduate status on the recommendation of the department of proposed graduate study. Only students with full graduate status may be considered for the award of an advanced degree.

**Provisional Graduate Status:** Applicants who are graduates of a recognized college or university but who do not qualify for admission to full graduate status because of deficiencies in either their undergraduate course program or their scholastic achievement may be considered for provisional graduate status if strong supporting evidence of their ability to complete a graduate program is provided. Courses taken to remove deficiencies do not contribute toward completion of graduate degree requirements. Transfer from provisional to full graduate status is initiated and recommended by the department, and is possible only after removal of deficiencies and other conditions noted at the time of admission and satisfactory progress in graduate work.

**Special Status:** Students may be granted temporary admission as "special status" under the following circumstances:

1. Individuals who are seeking advanced degrees but who are unable to meet the deadline for filing all required credentials for admission may be granted temporary admission provided they present acceptable evidence concerning their qualifications for graduate study. Regular admission must be accomplished within the first term of registration.
2. Individuals not seeking an advanced degree but with specific qualifications for one or more courses, including courses required for licensing or certification, may register for such courses subject to review by the department and the dean. Schools providing such an opportunity may specify the number of credits or courses for which an individual may enroll while in this status and should also clearly specify the limitations on transfer of such credits toward a graduate degree if the individual is subsequently admitted to a graduate degree program.

Admission of Students from Other Countries

The University of Pittsburgh welcomes applications from students in other countries. An inquiry from a prospective student from abroad should receive from the department or school a prompt response that includes a description of the program(s), the necessary application forms, including the Application Data form and Supplemental Application for Foreign Students, and instructions concerning the completion of an application, including information about applying online.

When a department or school receives the completed application, including all academic records and letters of reference, it may request an admissions officer in the Office of International Services (OIS) to evaluate the duration of primary, secondary, and university education, the nature of the institution(s) attended, the system of grading in that institution, and to recommend admission or rejection of the candidate. Academic credentials must be originals written in the language in which credentials are normally issued. Certified translations must accompany credentials which are not in English.
Each foreign applicant must provide clear evidence of proficiency in English. (See English Language Proficiency.) In addition, each applicant must provide evidence of adequate financial resources for the estimated length of study at the University of Pittsburgh. The Office of International Services (OIS) will determine whether or not this requirement has been satisfied by the applicant.

When a department or school has completed its evaluation of the credentials of an applicant, it notifies the candidate that he or she is or is not academically qualified for admission. The letter to the applicant must state that the applicant will receive either a visa document or further instructions from the OIS. In all cases, a duplicate copy of the letter of admission and award of financial aid, if any, must be sent to OIS, as must copies of all rejection letters.

Upon satisfaction of all academic and non-academic requirements, the OIS will issue, as appropriate, the Form I-20 Certificate of Eligibility for Non-Immigrant "F-1" Student Status or Form DS-2019 Certificate of Eligibility for Exchange Visitor "J-1" Status. Along with visa documents, OIS will send information concerning arrival and orientation.

The University reserves the right, even after the arrival and enrollment of a student from another country, to require, at his or her own expense, individual curricular adjustments whenever particular deficiencies or needs are found. This could include enrollment without credit in additional course work in English as a foreign language or in courses prerequisite to his or her regular course of study. New students from abroad should be encouraged to use the services of OIS to help them in their adjustment to the United States and to facilitate their total educational experience.

**English Language Proficiency**

Graduate students must possess sufficient knowledge of English to study without being hindered by language problems, to understand lectures, and to participate successfully in class discussion. The determination that the applicant has sufficient proficiency is made by the admitting department or school, subject to University-wide minimum standards determined by the University Council on Graduate Study. The University's full policy on Assessment for English Language Proficiency for Admission (Policy 09-02-01) can be found at http://www.cfo.pitt.edu/policies/policy/09/09-02-01.html. Any exceptions to this policy must be approved by the Provost or Provost's delegate after review of the entire record and consultation with the Office of International Services.

In keeping with the University policy on Certification of English Language Fluency for Teaching, students who are not native-speakers of English and are appointed as teaching assistants or teaching fellows are required to take a test of their spoken English upon arrival. Individuals are given non-teaching assignments and are required to take special course work until they attain passing scores. An unsatisfactory score at the time of reappointment is sufficient cause for nonrenewal.

**Readmission**

A student who has not registered for at least one credit during a 12-month period will be transferred automatically to inactive status and must file an application for readmission to graduate study (and pay the application fee) before being permitted to register again. While on inactive status, a student is not eligible to use University facilities and should not expect to receive counseling by the faculty or active supervision by his/her adviser and committee. Readmission is not automatic nor does it necessarily reinstate the student in the academic status enjoyed prior to becoming inactive. When readmitted, the student must be prepared to demonstrate proper preparation to meet all current admission and degree requirements.

**Registration**

The Office of the Provost publishes the University of Pittsburgh Academic Calendar, which establishes the dates for registration. A student must be officially admitted, readmitted, or reinstated to the University before he or she may register for courses.

Faculty members are responsible for advising students concerning their programs and specific course selections each term. Students are required to follow the registration process outlined by their school, and they must adhere to registration deadlines in order to avoid the assessment of a late registration fee. Students pursuing two degrees or a degree and a certificate simultaneously must list one as the primary academic program and may list the other as a secondary academic program during the registration process. Students are billed at the tuition rate of the primary academic program. It is recommended that such students meet with advisers in both the primary and secondary academic programs. Generally, a certificate program should be listed as a secondary academic program.
Students registering for the first time should be advised to complete registration well before the beginning of the term. After the start of classes, registration is permitted for new and continuing students only with the written approval of the dean in unusual circumstances and with the payment of a late registration fee.

All graduate students are expected to be registered in accordance with the program of study they are carrying. No person should expect to receive guidance and direction from members of the Graduate Faculty unless he or she is so registered. Students must be registered in the term in which they take preliminary and comprehensive examinations.

All graduate students must register for at least one credit during the 12-month period preceding graduation and must be registered for the term in which they are graduated. Waivers may be obtained by submitting a written request to the Registrar from the dean of the school. The request should be based on very extenuating circumstances, e.g., inability of the student's dissertation committee to meet during the final term when a student has given reasonable notice or the student has completed all degree requirements in a previous term.

The Registrar will withhold registration and add/drop services from students who so warrant for financial, academic or disciplinary reasons. The University reserves the right to change registration procedures. For additional registration information, visit the University Registrar's website at http://www.registrar.pitt.edu/enrollment.html.

**Full-Time and Part-Time Study**

Graduate students who register for nine to fifteen credits in the fall or spring term are full-time students and are assessed the current tuition rate for their school. A school may require students enrolled in a degree program to register for more than nine credits. Students who register for fewer than nine credits are part-time students and billed on a per-credit basis. Admission procedures for part-time students are the same as those for full-time students.

Doctoral students who have completed all credit requirements for the degree, including any minimum dissertation credit requirements and are working full-time on their dissertations may register for "Full-time Dissertation Study," which carries no credits or letter grade but provides students full-time status. Students so enrolled are assessed a special tuition fee.

**Maximum Programs of Study**

No student is permitted to register for more than 15 graduate credits without written permission from the dean of the academic center in which the student is pursuing a degree. Graduate students who register for more than 15 credits will be billed for each additional credit that exceeds their full-time tuition rate. Individual schools and departments may restrict the maximum program of any or all of their graduate students.

**Cross-registration**

Through the Pittsburgh Council on Higher Education (PCHE), Carlow University, Carnegie-Mellon University, Chatham University, Duquesne University, La Roche College, the Pittsburgh Theological Seminary, Point Park University, Robert Morris University and the University of Pittsburgh offer graduate students the opportunity for cross-registration in graduate programs in the fall and spring terms. Only full-time students may cross-register. Please note that students must maintain a full-time course load (at least 9 credits as a graduate student) at Pitt while cross-registered. Credits earned by cross-registration in graduate courses, when approved in advance by the student's graduate adviser, are accepted as University of Pittsburgh credits for the purpose of the calculation of the grade point average and the completion of degree requirements. Each department at each institution retains the authority to establish the prerequisites for admission and the maximum enrollment in its own courses and to grant priority in registration to its own graduate students.

**Course Withdrawal**

Students may add or drop courses before the end of the Add/Drop period. A student who wishes to withdraw from an individual course after the Add/Drop period but prior to the end of the ninth week of the term or the deadlines noted in the Schedule of Classes for the summer sessions, must complete a Monitored Withdrawal form available from the dean, obtain the signature of the instructor, and return the completed form to the dean's office of the school offering the course. A W grade will then be issued. After the official withdrawal deadline a student may withdraw from a course only in extraordinary circumstances and with the permission of the dean.
Students may terminate their registration in all classes by informing the Office of the Registrar of their intent to do so prior to the end of the Add/Drop period for the term. Students registered for courses scheduled to begin after the end of the Add/Drop period for the term may terminate their registration by informing the Registrar's Office of their intent to do so at any time prior to the first scheduled meeting day of the class.

An official resignation occurs when the student notifies the Office of Student Accounts of the intent to terminate registration for all classes after the end of the term's/sessions' Add/Drop period but no later than the 60th calendar day of the term or the deadlines noted in the Schedule of Classes for the summer sessions. The R grade will be assigned for each course for which the student registered.

A student may withdraw from all courses after the 60th calendar day of the term or by the deadlines noted in the Schedule of Classes for the summer sessions by processing their withdrawal through the office of the student's academic dean. There is no financial adjustment associated with this procedure, which results in the assignment of W grades for the courses.

A student who stops attending a course and does not initiate the withdrawal or resignation procedures may be assigned an F grade.

Students who plan to return to the University within one calendar year must indicate this when they provide notification of resignation. Students who do not advise the University of their intent to return to the University within one calendar year are classified as permanent resignations. Students who permanently resign and later decide to return to the University must apply for readmission and pay the appropriate fees. This includes cases when the readmission date is less than one year from the effective date of resignation.

**Tuition, Fees and Other Charges**

Tuition rates, fees, and other charges paid by graduate students are established by the Board of Trustees in cooperation with the University Administration.

The University reserves the right to change registration procedures. For additional registration information, visit the University Registrar's website at http://www.registrar.pitt.edu/enrollment.html.

**University Grading Policy for Graduate Courses**

*Introductory (or master's level) graduate courses are assigned the numbers 2000-2999; advanced (or doctoral level) graduate courses are assigned numbers 3000-3999.*

The following policy includes all grades and their corresponding definitions which may be legitimately issued within the schools of the University of Pittsburgh. All available grading options and their uses are also included. Each school uses symbols and grading options consistent with this University Grading Policy. The Registrar will record for a particular course only those grades specified in the Schedule of Classes. An inappropriate grade reported for a student will register as invalid, hence Z. Students will be subject to the grading policy of the school in which a course is given. Graduate students wishing to register for undergraduate courses should contact the dean's office of the Academic Center offering the course to explore grading option requirements and procedures.

**Grading System Definitions and Grade Points**

A+ = 4.00

A  = 4.00 Superior attainment

A- = 3.75

B+ = 3.25

B  = 3.00 Adequate graduate level attainment

B- = 2.75
C+ = 2.25
C  = 2.00 Minimal graduate level attainment
C- = 1.75
D+ = 1.25
D  = 1.00
D- = 0.75
F  = 0.00 Failure

G Course work unfinished because of extenuating personal circumstances
H Exceptional (honors) completion of course requirements
I Incomplete course work, due to the nature of the course, clinical work, or incomplete research work in individual guidance courses or seminars
N Noncredit audit
NC No Credit
R Student resigned from the University
S Satisfactory (successful) completion of course requirements
U Unsatisfactory (failing) completion of course requirements
W Withdrawal
Z Invalid grade reported
** No grade reported

**Grading Options**

LG Letter Grade

H/S/U Honors/Satisfactory/Unsatisfactory

H/HS/S/LS/U Honors/High Satisfactory/Satisfactory/Low Satisfactory/Unsatisfactory*

S/NC Satisfactory/No Credit (formerly the S/N option)

LG and H/S/U Letter Grade and Honors/Satisfactory/Unsatisfactory

LG and S/NC Letter Grade and Satisfactory/No Credit

* This option is available for professional students in the School of Medicine only.
Each Academic Center is responsible for establishing guidelines as to which University-approved grading options are appropriate for courses offered by that Academic Center. Similarly, each department may identify from among the grading options approved by the Academic Center those it deems acceptable for the courses it offers. Furthermore, each course instructor may specify, within the range of grading options approved by the department and the Academic Center, the grading options which may be selected by students taking his or her course. A University Grade Option/Audit Request form is not required to be completed by a student and will not be accepted by the Office of the Registrar for a graduate course. Only the S/NC grading option may be used in evaluating thesis or dissertation research.

Grade Assignments

It is the responsibility of each faculty member of the University to assign a standard letter grade or option grade as listed in the Schedule of Classes to each student enrolled in an approved University course. All other grades will be recorded by the Registrar as a Z, an invalid grade.

N (Noncredit Audit) Option

A student may choose to audit any graduate course on a space available basis. After obtaining the instructor's permission to audit a course, the student follows the same procedures as registering for credit. Tuition is assessed for all audits. An N or W are appropriate grades for courses audited.

G and I Grades

A student may be graduated without removing G and/or I grades from the record provided all degree requirements have been met and the student's department recommends graduation. The individual school's grading policy should be consulted for regulations dealing with the removal of I grades. Students assigned G grades are required to complete course requirements no later than one year after the term in which the course was taken. Once the deadline has passed, the G grade will remain on the record, and the student will be required to re-register for the course if it is needed to fulfill requirements for graduation.

Grade Changes

A faculty member wishing to effect a grade change must complete a Grade Change Request. The dean of the school in which the course is offered or his or her designee must approve a grade change before it will be honored by the Registrar. While each school may determine a time limit for grade changes, they should be processed no later than one year after the initial grade was assessed. There may be reasons that justify a later change of grade, but they must be of an unusual nature and considered most exceptional. Any exception must receive the dean's approval. Changes in I grades are exempt from this policy.

Official University Record: GPA Calculation

A student's graduate Grade Point Average (GPA) is obtained by dividing the total number of letter grade credits taken in the graduate program into the total number of grade points earned in the graduate program. Only letter grades with GPA values will be used in computing the Grade Point Average.

A student may repeat any course in which a grade of B- or lower is received if an authorization to repeat the course is given by the student's adviser. A school may restrict the type and/or number of different courses which may be repeated during one degree program. The grade earned by repeating a course is used in lieu of the grade originally earned, although the original grade is not erased from the transcript. No course may be repeated more than twice. No sequence course may be repeated for credit after a more advanced course in that sequence has been passed with a B or higher grade. The repeated course must be the same as that in which the original grade was earned. In extenuating circumstances, a department chair or program director, with the dean's approval, may substitute another course of similar content. Grades of W, R, or N reported for the repeated course will not be counted as a course repeat.

To initiate only the last course grade being computed in the GPA, a Course Repeat form must be filed with the dean's office.
General Regulations

Academic Standards

A grade average of at least B (GPA = 3.00) is required in the courses which make up the program for any graduate degree.

A student with full graduate status is automatically placed on probation whenever his or her cumulative GPA falls below 3.00. Each school determines the restrictions placed on a student on probation. A student who remains on probation is subject to dismissal within a time period determined by the school, subject to review by the University Council on Graduate Study. A student on provisional or special status or on probation is not eligible to take the Ph.D. preliminary evaluation, the MA/MS or Ph.D. comprehensive examination, or to be graduated.

Statute of Limitations

The purpose of the statute of limitations is to ensure that a graduate degree from the University of Pittsburgh represents mastery of current knowledge in the field of study. Individual schools within the University may adopt policies that are more, but not less, stringent than those stated here.

All requirements for MA and MS degrees must be completed within a period of four consecutive calendar years from the student's initial registration for graduate study; all requirements for professional master's degrees, in five years. Dual degrees and joint degrees that require course work in excess of 50 credit hours may be granted a longer statute of limitations by the University Council on Graduate Study.

From the student's initial registration for graduate study, all requirements for the PhD degree must be completed within a period of ten years or eight years if the student has received credit for a master's degree appropriate to the field of study. Programs for professional doctoral degrees, for which the majority of candidates pursue part-time study while working full time within their chosen disciplines, may be granted a longer statute of limitations by the schools offering the degrees.

Under exceptional circumstances, a candidate for an advanced degree may apply for an extension of the statute of limitations. The request must be approved by the department or departmental committee (master's or doctoral) and submitted to the dean for final action. Requests for an extension of the statute of limitations must be accompanied by a departmental assessment of the work required of the student to complete the degree as well as documented evidence of the extenuating circumstances leading to the requested extension. Students who request an extension of the statute of limitations must demonstrate proper preparation for the completion of all current degree requirements.

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of two years may be granted to doctoral students or one year to master's students. The length and rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Acceptance of Transfer Credits

The completion of requirements for advanced degrees must be satisfied through registration at the Pittsburgh campus of the University of Pittsburgh. Graduate students already enrolled may, when approved in advance by their department and the dean, spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and transfer those credits toward the requirements for an advanced degree at the University of Pittsburgh. In such instances, neither the University nor any of its components is responsible for providing any financial assistance to the graduate student.

Official transcripts certifying graduate courses completed in a degree granting graduate program at another appropriately accredited institution prior to admission to the University of Pittsburgh should be submitted at the time of application and should be evaluated for acceptability as transfer credit early in the student's graduate career for acceptability as transfer credit subject to University policy, course equivalencies, and individual school requirements. In no case may the total number of credits transferred for completion of requirements for an advanced degree exceed the maximum number stated in the sections pertaining to advanced degree requirements. The Registrar, after notification by the dean, will enter the transfer (advanced standing) credits as block credits on the student's transcript. Grades (and grade points) are not recorded for credits accepted by transfer.
Transfer credits will not be accepted for courses in which a grade lower than B (GPA = 3.00) or its equivalent has been received. No credit will be granted toward an advanced degree for work completed in extension courses, correspondence courses, or in the off-campus center of another institution unless those credits are approved for equivalent graduate degrees at that institution and the institution has an accredited program.

Credit by Course Examination

Each school authorized to offer graduate courses should clearly specify in its school bulletin whether or not students may obtain credit toward a degree by the procedure of "credit by course examination." If such an option is provided, the courses for which this option is appropriate should be designated as such in the school bulletin. A school granting graduate credit for life or work experience should do so only through the option of credit by examination.

Registration of Undergraduate Students for Graduate Courses

Undergraduate students with sufficient preparation are permitted to enroll in graduate courses following procedures determined by each school. The graduate credits earned may be counted toward the undergraduate degree if approved by the student's school. These may not be counted as credits toward a graduate degree except as noted below.

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses which will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as Advanced Standing credits on the graduate transcript.

Early Admission Program

Exceptionally able undergraduate University of Pittsburgh students may be admitted to full graduate status if their graduate and undergraduate schools have approved early admission as a permitted option, have established standards and procedures, and provided the student needs no more than 24 credits to complete the baccalaureate degree. Credits earned while enrolled in the graduate program may also be counted toward fulfilling undergraduate degree requirements.

Course Work Acceptable as Graduate Credit

A substantial proportion of courses acceptable toward a graduate degree should be designed explicitly for graduate students. Introductory graduate level (master's level) courses are numbered 2000-2999, those at an advanced graduate level (doctoral level) are numbered 3000-3999. To be eligible for a master's degree, a student must have completed at least 30 credits at the graduate level with at least an average grade of B (3.00). A doctoral student must complete additional graduate level courses as determined by his or her department or school. No lower level undergraduate course (numbered 0001-0999 or 7000-7999) may be applied toward a graduate degree.

Students may register for graduate courses at Carlow University, Carnegie-Mellon University, Chatham University, Duquesne University, La Roche College, the Pittsburgh Theological Seminary, Point Park University, and Robert Morris University under the PCHE cross-registration agreement. Such work, if approved in advance by the student's adviser, will not be considered as transfer credit and may be counted for credit toward a graduate degree; the grade earned will be used in computing the student's grade point average.

Two Independent Degree Programs Simultaneously

Students may pursue two independent graduate degrees simultaneously in two different schools within the University or two different departments within the same school. Students desiring to enroll in two degree programs must have approval from both program faculties and their respective deans, must be admitted into both programs, and must satisfy the degree requirements of both programs. Students are billed at the tuition rate of the primary academic program. Normally, such students should be enrolled for no more than a total of 15 credits per term.
The same examination, thesis, or dissertation cannot be used to fulfill requirements for two independent degrees, although a maximum of six credits of course work may be used in partial fulfillment of the requirements of both degrees. It is the responsibility of the dean or deans, if two schools are involved, to ensure that this regulation is enforced.

**Dual and Joint Degree Programs**

Dual and joint degree programs result in two degrees being awarded. Requirements for these programs include all or most of the requirements of two distinct academic degree programs. Dual programs exist within a single school; joint programs exist between two or more schools; cooperative programs are administered by two or more institutions. The same course, examination, or thesis may be used to fulfill requirements only if so specified in the documents formally establishing the dual or joint degree program as approved by the University. These programs may result in a student earning two separate masters' degrees, a master's and a first professional degree, or a master's or first professional degree and a doctoral degree, but never result in a student earning two separate doctoral degrees.

Students must be admitted to both academic programs offering the dual or joint degrees being sought and must be graduated from both degree programs at the same time.

**Certificate Programs**

A certificate program at the graduate level is a coherent set of courses and related work in a particular area. The minimum credit requirement for a certificate is 15 credits, of which 12 credits must be completed at the University of Pittsburgh. Normally, a certificate is an award granted at the graduate level only to persons receiving graduate degrees or persons who enter with graduate degrees and wish advanced training in some specific area. It is often an interdisciplinary program and may be entered by students pursuing different degree programs. If earned in conjunction with a degree program, a certificate must require additional work. In some professional schools a particular certificate program may be designed for students who are not pursuing a master's degree. In this case admission requirements must be equivalent to admission requirements for a master's degree. A student must be formally admitted into a certificate program; the certificate may appear on the transcript as a degree goal and will appear on the final transcript as an awarded certificate.

There are three types of certificate programs at the graduate level:

- **Postbaccalaureate certificates** are usually aimed at meeting the needs of working adults searching for changes in careers. To be admitted to a postbaccalaureate certificate program, a student must have earned a baccalaureate degree at an accredited institution and meet the University's minimal requirements for admission to graduate school. Normally all courses are at the graduate level. As a minimum requirement, at least half of the credits required for the certificate must be earned in graduate courses and no lower-level undergraduate courses may count toward the certificate. If a student is subsequently admitted to a master's program, the credits earned in the certificate, if accepted by that program, may count toward completion of the master's program.

- **Graduate certificates** are used to enhance existing degree programs and to enable the student to show a breadth of study to future employers. To be admitted to a graduate certificate program, a student must already have earned a master's degree or be in the process of earning a graduate degree at the University of Pittsburgh. Normally all courses are at the graduate level. As a minimum requirement, at least half of the credits must be earned in graduate courses and no lower-level undergraduate courses may count toward the certificate. In a few fields, separate certificates are offered for master's students and for doctoral students, and in the latter program all courses must be at the graduate level. Certificates are awarded upon successful completion of the required program and the award of the graduate degree. They should require additional work beyond the graduate degree.

- **Post-Professional certificates** usually serve to provide additional and up-to-date expertise to a person who has earned the first professional degree. To be admitted to a post-professional program, a student must have earned a first professional degree or a professional master's degree in a particular professional field. All courses must be at the graduate level.

**Graduate Programs Offered in Off-Campus Locations or via Electronic Communication**

The academic standards set forth in the Regulations Governing Graduate Study apply to graduate programs offered in off-campus locations and offered via electronic communication. Admission criteria should be the same as those used by a school for its on-campus programs.
Editorial Assistance

A student preparing a dissertation or other written work as part of academic requirements may, when appropriate, use the assistance of professional editors, provided that (1) he or she receives the approval of the research adviser or professor of the course in which written work is being submitted; (2) that editorial assistance provided be limited to use of language and not to subject matter, content or meaning; and (3) that all editorial assistance be described and acknowledged in the report.

Publication of Theses and Dissertations

All theses and dissertations submitted at the University of Pittsburgh must be submitted electronically. Electronic Theses and Dissertations (ETDs) are theses or dissertations prepared as text-based PDF files that can contain non-text elements such as multimedia, sound, video, and hypertext links.

All ETDs are made publicly available on the University Library System's online catalog. Students may choose to restrict access to the ETD to University of Pittsburgh IP addresses for a maximum period of five years. After five years, the ETD will automatically become fully accessible. Full access to the ETD may be withheld for a maximum of one year if a patent application has been filed and the student receives appropriate approval from the Provost's Office.

All doctoral candidates are required to execute an agreement with ProQuest/University Microfilms Inc. for the publication of the dissertation in the ProQuest/UMI repository.

Any thesis or dissertation may be published, either by the University or through an outside agency, provided due credit is given to the University. No form of publication, however, shall relieve the student of his or her responsibility for supplying the electronic thesis or dissertation to the University Library System.

University Patent Policy

During enrollment at the University, a student may be responsible for new discoveries and inventions that could have commercial value and contribute to scientific, technological, social, or cultural progress. Those accomplishments should be patented in the best interest of the student, the University, the public, and the government. The University's policy on patents determines the rights and obligations of the student and the University in any technology the student may invent while enrolled in the University. Details of this University policy are available from the Office of Technology Management.

Application for Graduation

Each candidate for graduation must file an official Application for Graduation in the office of the dean early in the term in which graduation is expected. Students are required to be registered for at least one credit at the University in the 12 month period before graduation. Students must be registered in the term in which they are graduated. In exceptional circumstances, students who complete all the degree requirements at the end of a term but are graduated in the next may petition the dean of their school for a waiver of this requirement.

Prior to the end of the term in which they are graduated, all doctoral candidates must submit to the office of the dean a completed Survey of Earned Doctorates Awarded in the United States.

Certification for Graduation

The Graduate Faculty of the department or program evaluates the performance of the student. If that performance is satisfactory, a report should be submitted to the dean certifying that the candidate has satisfactorily completed all departmental requirements for a graduate degree. The dean, after confirming that the overall school and University requirements have been met, certifies the candidate for graduation.

Regulations Pertaining to Master's Degrees
Master of Arts and Master of Science Degrees

Master of Arts (MA) degrees are awarded for completion of graduate programs in various departments within the School of Arts and Sciences, the School of Education, and the Graduate School of Public and International Affairs; the Master of Science (MS) degree is offered in departments within the School of Arts and Sciences, the Joseph M. Katz Graduate School of Business, the School of Dental Medicine, the School of Education, the John A. Swanson School of Engineering, the School of Health and Rehabilitation Sciences, the School of Medicine, the Graduate School of Public Health, the School of Pharmacy, and the School of Social Work. Some of the MA or MS degrees offered are specified as being "in" a particular discipline; e.g., Master of Science in Chemical Engineering.

Programs of Study

The MA and MS degree programs provide an introduction to scholarly activities and research and often serve as preparation for teaching careers. These degrees are awarded for the completion of a coherent program designed to assure the mastery of specified knowledge and skills, rather than a random accumulation of a certain number of courses. The overall form and content of the student's program of study is the responsibility of the faculty of the department or program. To carry out this responsibility, each student must be assigned a major adviser, who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines.

At least five courses (15 credits) or one-half the master's degree program, whichever is greater, must be at the graduate level (the 2000 or 3000 series) and must be completed with at least an average grade of B (3.00). No course numbered below 1000 or from 7000 to 7999 may be applied toward graduate degree requirements.

Some master's programs may include approved areas of concentration or minors. Areas of concentration define and describe the student's training and expertise within the broader discipline. Minors represent significant coursework completed in an area related to the student's specialty. Such areas of concentration or minors are added to the transcript upon the granting of the degree.

Master's degrees are conferred only on those students who have completed all courses required for the degree with at least a 3.00 GPA.

The requirement of proficiency in foreign languages is at the discretion of individual departments or schools.

Departments or programs are expected to provide students with a copy of school and departmental regulations appropriate for their program. Students are expected to become familiar with these and to satisfy all prescribed degree requirements.

Credit Requirements

The Master of Arts and Master of Science degrees require the satisfactory completion of a minimum of 30 credits of graduate study approved by the department or school. Not more than six credits may be granted toward the completion of the requirements for a master's degree for work completed at another graduate institution. (See Acceptance of Transfer Credits for further information.)

Comprehensive Examination

MA or MS degrees are conferred only upon those students who, in one or more comprehensive examination or the equivalent, show that they have mastered the general field of their graduate study. Each department or similar unit is responsible for specifying the content and procedure for administration of the comprehensive examination and will specify for each candidate the field of his or her examination, which may vary from student to student. Whenever a program substitutes an equivalent requirement for the comprehensive examination, the department or program should notify the University Council on Graduate Study and describe the substitution.

Students on special or provisional status are not eligible to take a comprehensive examination. These examinations must be taken at least one month prior to the last day of the term in which the degree is to be granted. The results must be reported promptly to the office of the dean but no later than the last day of the term in which the examination is administered. A student who is unable to complete all degree requirements within a two-year period after passing the comprehensive examination may be re-examined at the discretion of the department, program director, or dean.

Thesis Option
The requirement of a thesis or its equivalent is at the discretion of individual departments, programs, or schools. If a thesis is submitted, its form must be in accord with specifications stipulated in the Format Guidelines for Electronic Thesis and Dissertation Preparation at the University of Pittsburgh. The thesis examining committee will consist of at least three members of the faculty recommended by the major adviser and approved by the department chair or program director. The final oral examination in defense of the master's thesis is conducted by the thesis committee, and a report of this examination signed by all members of the committee must be filed in the office of the dean. After the examination, all master's theses must be submitted electronically and will be made available through PITTCat, the University Library System's online catalog.

Non-thesis Option

It is usual for a program to require additional course work if a thesis is not required.

For the Master of Arts degree, each student must describe one or more substantial intellectual experience(s) or accomplishment(s) acceptably in writing. In programs in which a master's thesis is optional, the student must satisfy this requirement by submitting a paper (or papers), as designated by the major department, and must demonstrate competence in using the methods of scholarship.

For the Master of Science degree, a paper or research project is usually required.

Professional Master's Degrees

The University of Pittsburgh, through its professional schools, offers the following master's degrees in professional fields of study: Master of Business Administration, Master of Dental Science, Master of Fine Arts, Master of Education, Master of Science in Geographic Information Systems and Remote Sensing, Master of Health Administration, Master of Health Promotion and Education, Master of Science in Information Science, Master of International Business, Master of International Development, Master of Law, Master of Library and Information Science, Master of Applied Mathematics (MA and MS), Master of Science in Nursing, Master of Occupational Therapy, Master of Physical Therapy, Master of Public Administration, Master of Public Health, Master of Public and International Affairs, Master of Public Policy and Management, Master of Social Work, Master of Arts in Teaching, and Master of Science in Telecommunications.

Programs of Study

The professional master's degree programs are generally similar to those for the MA and MS except that they emphasize instruction in professional affairs and practice and serve as preparation for careers in the professions. The program of study should be a coherent program designed to assure the mastery of specified knowledge and skills, rather than a random accumulation of a certain number of courses. The overall form and content of the student's program of study is the responsibility of the student's department or school. To carry out this responsibility, each student must be assigned a major adviser, who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines.

At least one-half of the credits earned in a master's degree program must be at the graduate level (the 2000 or 3000 series) and must be completed with at least an average grade of B (3.00). No courses numbered below 1000 or from 7000 to 7999 may be applied toward graduate degree requirements.

Master's degrees are conferred only on those students who have completed all course requirements with at least a 3.00 GPA.

Departments or programs are expected to provide students with a copy of school and departmental regulations appropriate for their programs. Students are expected to become familiar with these and to satisfy all prescribed degree requirements.

Credit Requirements

The professional master's degrees require the satisfactory completion of a minimum of 30 credits of graduate study approved by the department. No more than one-third of the total number of required credits may be granted to a student as transfer credit for work done at another graduate institution. (See Acceptance of Transfer Credits.)

Additional Requirements
Most professional master's degree programs provide opportunities for theoretical studies and practical applications. Students are expected to acquire professional skills through course work, projects, internships, practica, and/or research papers.

**Student Assessment**

Professional master's degrees are conferred upon those students who demonstrate comprehensive mastery of the general field of study. This includes: a) satisfactory completion of all course requirements and b) other performances which indicate comprehensive mastery such as examinations, internships, research projects, theses, practica, and so forth. These requirements vary from school to school.

**Regulations Pertaining to Doctoral Degrees**

**Doctor of Philosophy Degree**

Doctor of Philosophy degrees are awarded for completion of graduate programs in various departments within the School of Arts and Sciences, the Joseph M. Katz Graduate School of Business, the School of Dental Medicine, the School of Education, the John A. Swanson School of Engineering, the School of Health and Rehabilitation Sciences, the School of Information Sciences, the School of Medicine, the School of Nursing, the School of Pharmacy, the Graduate School of Public Health, the Graduate School of Public and International Affairs, and the School of Social Work.

**Admission to Doctoral Study**

In some doctoral programs, the requirements for admission to graduate study and for admission to doctoral study are identical, while other programs require the completion of a master's degree or its equivalent as a prerequisite for admission to doctoral study. Admission to doctoral study does not include any implication concerning "admission to candidacy for the Doctor of Philosophy degree."

Normally, only one major department of graduate study is permitted for the PhD degree. However, a few formal interdisciplinary programs and, under some circumstances, some independently designed interdisciplinary doctoral programs are available (see Interdisciplinary Doctoral Programs).

**Programs of Study**

All PhD programs offered at the University of Pittsburgh should provide a coherent series of courses, seminars, and discussions designed to develop in the student a mature understanding of the content, methods, theories, and values of a field of knowledge and its relation to other fields. Each program should train the student in the methods of independent research appropriate to the discipline and provide an adviser and a committee to guide the student in an extended investigation of an original and independent research project of significance in the field.

The overall form and content of each student's program is the responsibility of the Graduate Faculty of the department or program. To carry out this responsibility, departments or programs must ensure that each student has a major adviser who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines. The adviser may prescribe additional courses both within and outside the department or program that are essential and/or appropriate to the student's program.

Some doctoral programs may include approved areas of concentration used to define and describe the students' training and expertise within the broader discipline. Such an area of concentration is added to the transcript upon the granting of the degree.

Doctoral level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study. Normally, courses numbered below 2000 do not meet the minimum requirements for doctoral study, although they may be taken to supplement a doctoral program.

Students must maintain a minimum cumulative GPA of 3.00 in courses to be eligible to take the preliminary and comprehensive examinations as well as to be graduated.

The requirement of proficiency in the use of foreign languages or other tools of research is at the discretion of individual departments or schools.
Departments or programs are expected to provide students with a copy of school and departmental regulations appropriate for their program and, in turn, students are expected to become familiar with these and to satisfy all prescribed degree requirements.

Credit Requirements

The minimum credit requirement for the PhD degree is met by six terms of registration as a graduate student for 12 or more credits per term or the equivalent number of credits in a reduced load. If the school requires completion of its master's degree program prior to admission into its doctoral program, at least four terms of registration for 12 or more credits per term or the equivalent number of credits in a reduced load are required as a minimum for the PhD degree. No more than 30 credits may be accepted for a master's degree awarded by another institution to meet the minimum credit requirement. In recognition of graduate study beyond the master's degree successfully completed elsewhere, no more than 12 additional credits may be accepted at the time of admission to meet the minimum credit requirement. (See Acceptance of Transfer Credits) No more than 30 credits may be accepted for a previously earned PhD degree in recognition of master's degree work.

Graduate students already enrolled may, when approved in advance by their department or programs and the dean, spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and transfer those credits toward the requirements for an advanced degree at the University of Pittsburgh. In all cases, at least three terms, or 36 credits, of full-time doctoral study or the equivalent in part-time study must be successfully completed at the University of Pittsburgh.

Students must register each term for the number of credits of course work, independent study, or research equivalent to the anticipated use of faculty time and University facilities. A student who has not registered for at least one credit during a 12-month period will be transferred automatically to inactive status and must file an application for readmission to graduate study (and pay the application fee) before being permitted to register again.

Residency Requirement

Students seeking the PhD degree are required to engage in a minimum of one term of full-time doctoral study, which excludes any other employment except as approved by their departments or programs.

Preliminary Evaluation

The preliminary evaluation should be designed to assess the breadth of the student's knowledge of the discipline, the student's achievement during the first year of graduate study, and the potential to apply research methods independently. The form and nature of the evaluation should be approved at the school level and described in the school bulletin. It should be conducted at approximately the end of the first year of full-time graduate study. The evaluation is used to identify those students who may be expected to complete a doctoral program successfully and also to reveal areas of weakness in the student's preparation. Evaluation results must be reported promptly to the dean's office, but no later than the last day of the term in which the evaluation occurs.

Comprehensive Examination

The Comprehensive Examination should be designed to assess the student's mastery of the general field of doctoral study, the student's acquisition of both depth and breadth in the area of specialization within the general field, and the ability to use the research methods of the discipline. In some programs, the comprehensive examination is combined with the overview or prospectus meeting. It should be administered at approximately the time of the completion of the formal course requirements and should be passed at least eight months before the scheduling of the final oral examination and dissertation defense. In no case may the comprehensive examination be taken in the same term in which the student is graduated. Examination results must be reported promptly to the dean's office but no later than the last day of the term in which the examination is administered. A student who is unable to complete all degree requirements within a five-year period after passing the comprehensive examination may be re-examined at the discretion of the department, program, or school.

Doctoral Committee

Before admission to candidacy for the PhD degree, the student's major adviser proposes for the approval of the doctoral program director and the dean a committee of four or more persons, including at least one from another department in the University of Pittsburgh or from an appropriate
graduate program at another academic institution, to serve as the doctoral committee. The majority of the committee, including the major adviser, must be full or adjunct members of the Graduate Faculty. This committee must review and approve the proposed research project before the student may be admitted to candidacy.

This doctoral committee has the responsibility to advise the student during the progress of the candidate's research and has the authority to require high quality research and/or the rewriting of any portion or all of the dissertation. It conducts the final oral examination and determines whether the dissertation meets acceptable standards.

Meetings of the doctoral candidate and his/her dissertation committee must occur at least annually from the time the student gains Admission to Doctoral Candidacy. During these meetings, the committee should assess the student's progress toward degree and discuss objectives for the following year and a timetable for completing degree requirements. It is the responsibility of the dean of each school to determine a mechanism for monitoring the occurrence of these annual reviews.

The membership of the doctoral committee may be changed whenever it is appropriate or necessary, subject to the approval of the department chair or program director and the dean.

When a doctoral committee member leaves the University, he or she must be replaced unless the dissertation is almost complete or the member has an essential role on the committee. In the latter case, the dean's approval should be obtained. When the chair of a committee leaves and cannot be conveniently replaced, a co-chair must be appointed from within the department, and the restructured committee requires the approval of the department chair or director of the school's doctoral program and the dean. If the defense takes place within a few months of the chair's departure, the requirement of the co-chair is usually waived.

A retired faculty member may remain as a member or chair of a committee if he or she is spending considerable time in Pittsburgh or its vicinity and is still professionally active. Retired faculty who meet these criteria may also be appointed as a member or as a co-chair (but not chair) of a newly-formed committee. Retired faculty who leave the Pittsburgh area and/or do not remain professionally active should be replaced on committees and the revised committee approved by the department chair or the school's director of doctoral programs and the dean.

**Overview or Prospectus Meeting**

Each student must prepare a dissertation proposal for presentation to the doctoral committee at a formal dissertation overview or prospectus meeting. The overview requires the student to carefully formulate a plan and permits the doctoral committee members to provide guidance in shaping the conceptualization and methodology of that plan. The doctoral committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree. Approval of the proposal does not imply either the acceptance of a dissertation prepared in accord with the proposal or the restriction of the dissertation to this original proposal. The student is responsible for ensuring that all appropriate regulatory approvals are obtained for the proposed research. For example, if the research proposed in the overview or prospectus involves human subjects, that proposed research must be approved by the University Institutional Review Board (IRB) before it may be carried out.

**Admission to Candidacy for the Doctor of Philosophy Degree**

Admission to candidacy for the Doctor of Philosophy degree constitutes a promotion of the student to the most advanced stage of graduate study and provides formal approval to devote essentially exclusive attention to the research and the writing of the dissertation. To qualify for admission to candidacy, students must be in full graduate status, have satisfied the requirement of the preliminary evaluation, have completed formal course work with a minimum grade point average of 3.00, have passed the comprehensive examination, and have received approval of the proposed subject and plan of the dissertation from the doctoral committee following an overview or prospectus meeting of the committee. In some schools, admission to candidacy is a prerequisite to registration for dissertation credits. Students are informed of admission to candidacy by written notification from the dean, who also states the approved doctoral committee's composition.

**Dissertation and Abstract**

Each student must write a dissertation that presents the results of a research project carried out by the student. An appropriate research project involves a substantive piece of original and independent research grounded in an appropriate body of literature. It is relevant to an identifiable field as it is currently practiced. It presents a hypothesis tested by data and analysis and provides a significant contribution or advancement in that field. It is the responsibility of the student's doctoral committee to evaluate the dissertation in these terms and to recommend the awarding of the doctoral degree only if the dissertation is judged to demonstrate these qualities.
Characteristics which a dissertation should demonstrate are: the establishment of a historical context for the presentation of an innovative and creative approach to the problem analysis and solution; a clear understanding of the problem area as revealed by analysis and synthesis of a broad literature base; a well defined research design; clarity in composition and careful documentation; results of sufficient merit to be published in refereed journals or to form the basis of a book or monograph; sufficient detail so that other scholars can build on it in subsequent work; the preparation of the author to assume a position within the profession.

If the dissertation is the result of a collaborative research effort, the project should be structured in such a way that the student's dissertation results from one, clearly identified piece of work in which the student has supplied the unquestionably major effort. The contributions of the student and the other collaborators must be clearly identified.

Published articles authored by the student and based on research conducted for the dissertation study may be included in the dissertation, if the student's department and school have a written policy that this is acceptable. In any case, the published work must be logically connected and integrated into the dissertation in a coherent manner, and sufficient detail must be presented to satisfy the characteristics of a dissertation. The student should be the sole or primary author of the published work. If the published articles were co-authored, the contribution of the student must be clearly delineated in the introduction so the committee can ascertain that the student's own work satisfies the requirements of a dissertation. Instructions on incorporating articles into the dissertation are provided in the Format Guidelines for Electronic Thesis and Dissertation Preparation at the University of Pittsburgh.

Candidates for the doctoral degree must provide a suitable number of copies of the dissertation, as determined by the doctoral committee and school policy, for review and use during the final oral examination. The general format of the dissertation and the abstract is determined by the Office of the Provost and is set forth in the Format Guidelines for Electronic Thesis and Dissertation Preparation at the University of Pittsburgh. Specific instructions should be available in the office of the dean of the school. After the final oral examination is successfully completed, the candidate must electronically submit the approved complete dissertation and abstract in final form. The candidate must submit a dissertation approval form, the required agreement with University Microfilms Inc. for the publication of the dissertation on microfilm and for the publication of the abstract in Dissertation Abstracts, and any appropriate fees to the designated student services representative in the dean's office of the candidate's school.

**Language of the Doctoral Dissertation**

The language in which doctoral dissertations are written shall normally be English. Exceptions may be granted by the student's dean with the approval of the dissertation adviser and committee, but only for sound reasons of scholarship. Permission shall never be granted on the ground of inadequate command of English.

**Final Oral Examination**

The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and need not be confined to materials in and related to the dissertation. Any member of the Graduate Faculty of the University may attend and participate in the examination. The date, place, and time of the examination should be published well in advance in the University Times. Other qualified individuals may be invited by the committee to participate in the examination. Only members of the doctoral committee may be present during the final deliberations and may vote on the passing of the candidate. A report of this examination, signed by all the members of the doctoral committee, must be sent to the dean. If the decision of the committee is not unanimous, the case is referred to the dean for resolution. The chair of the doctoral committee should ensure that the dissertation is in final form before requesting signatures of the members of the committee.

**Interdisciplinary Doctoral Programs**

A student may be admitted into one of two types of interdisciplinary doctoral programs:

1. **Generic Programs**, which are ongoing, formally structured, and approved doctoral programs, admission into which follows the same procedures as those of departmental programs; and,
2. **Individualized Programs**, which are specially designed to permit an exceptionally able student who has earned a master's degree or the equivalent to pursue an interdisciplinary doctoral program structured to satisfy his or her unique goals. Such students should apply to the dean of the school if the departments involved in the proposed program are organized within one school or to the Provost if the departments are organized within more than one school. The student must satisfy the admission requirements of each of the departments or schools involved in the proposed program. If the request is approved, the dean or the Provost, in consultation with the departments concerned, will designate five members from these departments to serve as an advisory committee. After these advisers meet with the student, a chief adviser is selected to assume responsibility for
general guidance to the student. These advisers continue their responsibility until the student is admitted to candidacy for the PhD degree and may, if it is appropriate, continue as the doctoral committee for this student.

Other Research Doctoral Degrees

The University of Pittsburgh, through its professional schools, offers the following research doctoral degrees in professional fields of study: Doctor of Education offered through the School of Education and the Doctor of Public Health offered through the Graduate School of Public Health.

These doctoral degree programs are similar to those for the PhD in the degree of rigor required, the minimum total credit requirements and permissible transfer credits, requirements for the successful completion of a preliminary evaluation and a comprehensive examination, admission to doctoral candidacy, nomination of a doctoral committee, preparation of the dissertation and abstract, publication of the dissertation, and successful completion of the final oral examination. These doctoral dissertations are usually based on an in-depth research project by the student and are intended to permit the student to apply relevant theory and knowledge as well as demonstrate skills in analysis of a major problem and to contribute to the improvement of practice in the student's area of specialization.

Other Professional Doctoral Degrees

The University of Pittsburgh also offers professional doctoral degree programs for practitioners, including the JSD (Law), DNP (Nursing), AuD (Audiology), DPT (Physical Therapy), PharmD (Pharmacy), and CScD (Clinical Science). These programs provide a coherent curriculum designed to impart the mastery of a substantial and complex body of knowledge that will serve as preparation for leadership and excellence in the practice of the profession. The curriculum should contain a research component to achieve the goal for the research competence of the graduate. Students should deliver a report based on research that demonstrates both mastery of their subject matter and a high level of communication skills. The curriculum should contain an internship, a practicum or a clinical component. Each experience should have associated with it clear goals and objectives, a statement of what skills the student should master, a statement of how those skills will be assessed objectively by the academic program and what steps the program will take in response to those assessments. In addition, the program should have an objective way to evaluate the site where internships and/or clinical rotations take place and assure the expertise of those responsible for administering training and instruction. If the program is an accredited program, the standards of the accrediting body for a professional doctorate must be met.

To attain the depth of knowledge and experience required by someone earning a doctorate, a minimum 9 semesters of full-time study are required. Of this no more than one-third should be internships or clinical work. A comprehensive examination will be used to assess the student's mastery of a substantial and complex body of knowledge.

The minimum admission requirements must be the same as for all graduate programs at the University of Pittsburgh. In addition, the student must have completed a defined set of prerequisites so that all students will enter with required basic knowledge. A student must attain a 3.00 GPA in order to maintain good standing and be graduated.
Application for Admission

Graduate admissions to the University of Pittsburgh are handled by the particular graduate school or program; there is no central admissions office for graduate and professional schools at the University.

This section details only the University requirements and procedures for admission to the University. The Graduate Admissions Office of each school provides admissions information for prospective students to that school.

The admissions information in this section is subject to change at any time. It is intended to serve only as a general source of information.

Graduate Admissions

Decisions regarding admission are based on an overall evaluation of all the credentials submitted by the candidate and in accord with the availability of faculty, facilities, and student support necessary to meet the applicant's expressed academic and research needs and interests. Many departments or programs have a limited number of places available. Interested students should refer to the Schools, Departments, and Programs section of this bulletin in addition to the general admission information provided here.

Application Procedures

Students seeking admission should apply online or call or write to the school or program of intended graduate study for application forms or information about applying online, instructions concerning the completion of all forms including the Application Data Form, and description materials. See the Schools, Departments, and Programs section of this bulletin for contact information and Web site addresses.

The applicant should complete the online application and submit the application fee through the online payment system. If the applicant submits a paper application, he or she should return the completed application and a check for the application fee (payable to the University of Pittsburgh) to the department or school. Cash is not accepted for application fees.

Applicants must also request that the registrars of all undergraduate and any graduate schools attended send official transcripts of their records to the department or school of intended graduate study. In addition, many schools and departments require additional material. These materials may include any or all of the following: scores achieved on standardized examinations such as the Graduate Record Examination or the Miller Analogies Test, letters of recommendation, term papers written during previous study, evidence of work/life experience, evidence of motivation for graduate study, and a statement of career objectives. Applicants should arrange for a personal interview if requested by the department or school.

Application Deadlines

See the Schools, Departments, and Programs sections of this bulletin for information about specific application deadlines, but note that students applying for fellowships and assistantships should file their applications at the earliest possible date. Applicants interested only in admission may be considered up to the deadline dates, but postponing applications may entail the risk that available spaces will be filled. Some programs admit students only for a particular term, so prospective students are encouraged to check with the school and program for specific admissions information.

International Graduate Student Admission

The admission of international graduate and first-professional students is processed by the school or department. Information about graduate and first-professional programs, access to the online application, deadlines, financial aid information, the admission requirements and procedures are available on the Web site of the school or department of intended study Web site addresses may be found in the School, Department, and Programs section of this bulletin or on the Graduate and Professional Website. International students are recommended to start the application process at least 12 months in advance of the intended term of enrollment.

International Student Academic Requirements and Credentials
The minimum requirement for admission to a graduate program is the completion of a bachelor's degree from a regionally accredited institution in the United States or the completion of education that the University of Pittsburgh deems comparable to a bachelor's degree from a regionally accredited institution in the United States.

Applicants are required to submit official original academic credentials. Official original academic credentials that are issued in a language other than English must be accompanied by a certified English translation. In cases where the transcript (grade report, academic record, examination results, mark sheet) does not attest to the awarding of a degree or an academic qualification, a certified copy of the original certificate or diploma awarding the degree or qualification must also be submitted. Certificates or diplomas that are issued in a language other than English must be accompanied by a certified English translation.

**English Language Proficiency Requirements**

International graduate students must possess proficiency in English at a level to enable them to succeed in graduate-level studies. The University of Pittsburgh uses the official results of the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) as a measure of having the necessary English language proficiency. Official test results are required if the applicant is a citizen of a country where English is not the official language of that country. The required minimum acceptable score for graduate admission for the TOEFL is 80 for the Internet-based test, 213 on the computer-based version or 550 on the paper-based test; or Band 6.5 on the IELTS (taking the academic writing and reading modules of the test). Some graduate programs may require higher test results. Only officially reported results of the TOEFL or IELTS are accepted in meeting this requirement. Applicants who are citizens of a country where English is the official language are exempt from submitting the results of the TOEFL or IELTS. In addition, applicants who have earned a bachelor's degree or higher degree from a regionally accredited institution in the U.S. are also exempt from submitting the results of the TOEFL or IELTS.

Students with a TOEFL score of less than 600 (250 on the computer-based test or 100 on the Internet-based test) or less than 7.0 on the IELTS must verify English language proficiency prior to completing registration by sitting for an additional Test of English Language Proficiency (TELP) administered through the English Language Institute. Individual schools or departments may require students with higher test scores to sit for this TELP. Based on the test results, students may be required by their academic department or school to take courses in English as a second language as part of their graduate program.

**English Language Fluency for Teaching Assistants/Fellows**

Teaching assistants (TAs) and teaching fellows (TFs) who are non-native speakers of English must be evaluated through a test designed to assess spoken English and English comprehension, approved by the Office of the Provost and administered by the English Language Institute (ELI). The Office of the Provost in consultation with ELI will establish minimum scores acceptable to permit a TA/TF to teach. Individual academic centers or departments may require higher scores than the established University minimums. All TAs/TFs with unsatisfactory scores on this test will be given non-teaching assignments and are required to take special course work until they attain a passing score. An unsatisfactory score at the time of reappointment is sufficient cause for nonrenewal of the student's TA/TF appointment.

**Office of International Services**

The Office of International Services (OIS) advises international students on how to maintain their immigration status and helps to ensure compliance for both international visitors and the University, with respect to federal regulations. OIS also provides generalized support in connecting the University's international community and their hosting departments with resources inside and outside campus. For more information, contact OIS at ois@pitt.edu or call 412-624-7120.

**Process for Issuing Visa Documents for International Graduate Students**

After an international student has been accepted and submitted their enrollment deposit, the school or department will inform the Office of International Services (OIS) of the student's intention to enroll. OIS will then contact the student directly to collect any documents required prior to issuance of the Form I-20 or Form DS-2019.
The deadlines for schools or departments to inform OIS of new students are:

- **Fall Term** - June 1
- **Spring Term** - October 1
- **Summer Term** - March 1

Immigration documents are mailed to the student in his/her home country, usually within 3 weeks of receiving all required information from the student.

### Additional International Student Requirements

The University of Pittsburgh reserves the right, even after arrival and enrollment, to make individual curricular adjustments whenever particular deficiencies or needs of a student are identified. In such instances, students may be required to take, at their own expense and without receiving credit, courses in English language (see English Language Proficiency Requirements above) or courses prerequisite to their course of study to make up deficiencies.

It is strongly recommended that students arrive in Pittsburgh at least two weeks before the start of the term to allow sufficient time to make housing arrangements and to take part in the orientation program conducted by the Office of International Services.

### Admissions Status

Admission may be granted or denied only by the dean of the school or his or her designee. However, non-immigrant students must meet U.S. Department of Homeland Security eligibility requirements for visa document issuance as determined by the Office of International Services. Acceptable students are admitted to graduate study in a specific department or school with "full," "provisional," or "special" graduate status depending on their qualifications and objectives. The qualifications described below represent the minimum standards of the University. These may be made more stringent or specific at the option of the department or school.

### Full Graduate Status

For admission to full graduate status, an applicant must be a graduate of an accredited U.S. college or university and must be considered qualified for advanced study by the department or school. This normally is demonstrated by a B average (a grade point average of 3.00 on a 4.00 scale) or better in the total undergraduate program. If students with less than a B average present alternative evidence (such as completion of an advanced degree or successful relevant work experience) of superior ability, they may be considered for full graduate status on the recommendation of the department of proposed graduate study. Only students with full graduate status may take the PhD preliminary evaluation, take the MA/MS or PhD comprehensive examination, be considered for the award of an advanced degree or certificate, or be graduated.

### Provisional Graduate Status

Applicants who are graduates of a recognized college or university but who do not qualify for admission to full graduate status because of deficiencies in either their undergraduate program or their scholastic achievement may be considered for provisional graduate status if strong supporting evidence of their ability to complete a graduate program is provided. Courses taken to remove deficiencies do not contribute toward completion of graduate degree requirements. Transfer from provisional to full graduate status is initiated and recommended by the department and is possible only after removal of deficiencies and other conditions noted at the time of admission and satisfactory progress in graduate work.

A student on provisional or special status or on probation is not eligible to take the PhD preliminary evaluation, to take the MA/MS or PhD comprehensive examination, or to be graduated.

### Special Status

Students may be granted temporary admission as "special status" under the following circumstances:
1. Students who are seeking advanced degrees but who are unable to meet the deadline for filing all required credentials for admission may be granted temporary admission provided they present acceptable evidence concerning their qualifications for graduate study. Regular admission must be accomplished within the first term of registration.

2. Students who are not seeking an advanced degree but who have specific qualifications for one or more courses, including courses required for learning or certification, may register for such courses subject to review by the department and the dean of the school. Schools providing such an opportunity may specify the number of credits or courses for which a student may enroll while in this status and should also clearly specify the limitations on transfer of such credits toward a graduate degree if the student is subsequently admitted to a graduate degree program. See Schools, Departments, and Programs section for specific requirements connected to special status students.

Guarantees and Early Admission to Graduate and First-Professional Programs

Undergraduate students receiving an academic merit scholarship who indicate certain professional programs (including communication science, dental medicine, education, law, medicine, physical therapy, and public and international affairs) as their intended field of study on the Freshman Application to the University of Pittsburgh will be automatically reviewed for guaranteed admission into that professional program. Early application is recommended, as spaces are limited.

Exceptionally able undergraduate University of Pittsburgh students may be admitted to full graduate status if their graduate and undergraduate schools have approved early admission as a permitted option and have established standards and procedures, and if the student needs no more than 24 credits to complete the baccalaureate degree.

Tuition Deposit

Once a student is admitted to a program, some of the graduate and professional schools at the University of Pittsburgh require a tuition deposit to secure the student's place in the incoming class. Students should refer to the Financial Issues: Tuition, Fees, Loans, and Scholarships section or to the admissions information for their specific school to determine the amount required for the tuition deposit.

Deferred Admission

If a department or school so approves, a student may defer admission for one year without having to complete any additional applications. If approved, the student is sent a new admission letter. Approval of a student's request to defer admission does not necessarily mean that any financial aid awarded is also deferred. See the Deferred Payments section of this bulletin for more information on deferring financial aid.

Readmission

A student who has not registered for at least one credit or full-time dissertation study during a 12-month period will be transferred automatically to inactive status and must file an application for readmission to graduate study (and pay the application fee) before being permitted to register again. Inactive students cannot apply to graduate, nor take preliminary or comprehensive exams. Readmission is not automatic nor does it necessarily reinstate the student to the academic status enjoyed prior to becoming inactive. When readmitted, the student must be prepared to demonstrate proper preparation to meet all current admission and degree requirements. Readmission is automatic, however, for students who receive prior approval for a formal leave of absence.

Changing the Field of Graduate Study

A student already admitted to graduate study and desiring to change a major department or school of graduate study must file an application for such a change in the office of the dean or the department of the school the student wishes to enter. The application for admission to the new department will be evaluated in the same manner as an application from a new student.
Admission to Graduate Study

An undergraduate degree is the minimal requirement for admission to graduate study. Students are admitted to a graduate program and granted one of the following three types of status:

1. **Full graduate status:** when all admission requirements are met;
2. **Provisional graduate status:** when some admission requirements are not (or inadequately) met;
3. **Special graduate status:** to take specific graduate-level courses for one or more terms.

All students, except those with temporary status, must apply either to the MS program or to the PhD program. Students admitted to the MS program are eligible to complete the requirements for that degree. If they wish to transfer to the PhD program, they must apply to the admissions committee, which will make its decision based on the student's performance in the MS program and on faculty recommendations.

Full Graduate Status

For admission to full graduate status, an applicant must be a graduate of an accredited U.S. college or university and must be considered qualified for advanced study by the department or school. International applicants must meet the admissions guidelines described under "Admission of Students from Other Countries." Qualification for advanced study normally is demonstrated by a B average (a grade point average of 3.00 on a 4.00 scale) or better in the total undergraduate program. If students with less than a B average present alternative evidence (such as completion of an advanced degree or successful relevant work experience) of superior ability, they may be considered for full graduate status on the recommendation of the department of proposed graduate study. Only students with full graduate status may be considered for the award of an advanced degree.

Provisional Graduate Status

Applicants who are graduates of a recognized college or university but who do not qualify for admission to full graduate status because of deficiencies in either their undergraduate course program or their scholastic achievement may be considered for provisional graduate status if strong supporting evidence of their ability to complete a graduate program is provided. Courses taken to remove deficiencies do not contribute toward completion of graduate degree requirements. Transfer from provisional to full graduate status is initiated and recommended by the department, and is possible only after removal of deficiencies and other conditions noted at the time of admission and satisfactory progress in graduate work.

Special Graduate Status

Students may be granted temporary admission as "special status" under the following circumstances:

1. Individuals who are seeking advanced degrees but who are unable to meet the deadline for filing all required credentials for admission may be granted temporary admission provided they present acceptable evidence concerning their qualifications for graduate study. Regular admission must be accomplished within the first term of registration.
2. Individuals not seeking an advanced degree but with specific qualifications for one or more courses, including courses required for licensing or certification, may register for such courses subject to review by the department and the dean. Schools providing such an opportunity may specify the number of credits or courses for which an individual may enroll while in this status and should also clearly specify the limitations on transfer of such credits toward a graduate degree if the individual is subsequently admitted to a graduate degree program.

Application Instructions and Requirements

Apply Online

Applications for graduate study must be completed and submitted entirely online. You will be asked to set up a free account with the ApplyYourself Application Network, which enables you to work on your application over several sessions. Your information is transmitted through a secured server and is kept confidential until you submit your application.
We require you to upload copies of your undergraduate/graduate transcripts to ApplyYourself. We do not need official transcripts unless you are admitted.

We require at least three letters of recommendation, two of these must be from Professors (preferable with PhD's), especially if you are applying for a PhD degree. ALL LETTERS MUST BE SUBMITTED ONLINE. No paper recommendation letters will be accepted.

Your application will be available for review by the department once all the evaluator's letters are submitted and all the transcripts are uploaded.

We do require the GRE general exam although we do not have a minimum score requirement

The required minimum TOEFL score of 90 (with at least a score of 22 in each of the four sections of speaking, listening, reading and writing) will be required for applicants. The required minimum IELTS score of 7.0 (with at least 6.5 in each of its four sections) will be required for applicants. If you do not meet the minimum TOEFL or IELTS scores, your application will not be considered for admission.

For material that must be sent to the department directly (such as GRE and TOEFL scores) our institution code is: 2927. A department code is no longer required.

Begin the online application process.

**Deadlines**

- **January 15:** Fall admission. All application materials, including TOEFL and GRE results, must be received in the admissions office by February 28. International students cannot be admitted if materials are not received by the deadline.
- **September 15:** Spring admission. All application materials, including TOEFL and GRE results, must be received in the admissions office by September 15. International students cannot be admitted if materials are not received by the deadline.

**BS+MS Program**

The department also offers a five-year BS+MS program.

**Application Status and Inquiries**

Email inquiries about Pitt's graduate programs may be sent to cs-admissions@cs.pitt.edu.
Financial Information

Tuition

Enrollment Fee or Tuition Deposit

Upon acceptance to the University, students may be required to pay a nonrefundable, nontransferable enrollment fee or tuition deposit. If paying an enrollment fee, part of that fee will be considered to be a tuition deposit, and part might be used to pay for new student programming of some nature. The tuition deposit component will be applied toward their first-term tuition. The amount of the deposit ranges from $200-$1,500. Instructions for payment will be specified in the admission letter.

Full-time and Part-time Tuition and Mandatory Fees

Mandatory fees vary by campus, undergraduate and graduate level, and by full-time and part-time enrollment. Tuition rates are campus, level, and school specific. The University's tuition and mandatory fee rates are available on the Tuition Rates - Pennsylvania Residents page or the Tuition Rates - Out-of-State Residents page.

Determining How Full-Time vs Part-Time Students are Billed

In the Fall and Spring Terms:

Undergraduate students registered for 12 to 18 credits in the Fall and Spring Terms are regarded as full-time students, and are assessed the current undergraduate "flat" tuition rate for their academic center.

Undergraduate students registered for fewer than 12 credits are considered part-time, and are billed on a per-credit basis.

Graduate students registered for 9 to 15 credits in the Fall and Spring Terms are regarded as full-time students, and are assessed the current graduate "flat" tuition rate for their academic center.

Graduate students registered for fewer than 9 credits are considered part-time, and billed on a per-credit basis.

Students will be charged per credit for each credit exceeding the maximum full-time credit limit.

In the Summer Term:

All students are billed on a per-credit basis in the Summer Term with the exception of students in the School of Dental Medicine Dental Hygiene Certificate Program; the Swanson School of Engineering undergraduate program; the Katz Graduate School of Business Full-time MBA, MBA/MS and EMBA Programs; and the School of Nursing Accelerated Nursing Program.

About Mandatory Fees

Mandatory Fee figures are applicable to students regardless of Pennsylvania or Out-of-State residency. Not listed under Mandatory Fees are:

1. Course/major fees that are based upon registration in specific courses (e.g., lab fees).
2. Academic fees (e.g., application fees, academic program fees for programs such as Cooperative Engineering Program and Study Abroad).
3. Service fees (e.g., late application for graduation and lost ID cards).
4. Professional workshop and professional development fees
5. Specific-student fees such as the Freshman Socialization Fee at the Greensburg Campus.
Residency/Reduced Tuition

Admitted students who are United States citizens and have lived in Pennsylvania for a continuous period of 12 months before enrollment in any institution of higher education may be eligible for Pennsylvania tuition rates. Students who wish to challenge their residency classification may petition for Pennsylvania tuition rates by submitting convincing evidence for review to the Student Appeals Office in Thackeray Hall. The University's policy on Pennsylvania Residency Classification is located online at https://www.cfo.pitt.edu/policies/policy/09/09-05-04.html.

Military affiliated students and students who are not U.S. citizens may be eligible for Pennsylvania tuition rates if they meet the qualifications and provide the documentation required by University of Pittsburgh Policy 09-05-04, Pennsylvania Residency Classification.

For any student younger than 22, both the student and parent(s) or legal guardian(s) must meet the residency requirements to be eligible for reduced tuition.

Financial Obligation

Students establish a financial obligation to the University when they enroll in courses and will be asked to acknowledge that obligation to be permitted to enroll in classes each term. The agreement to pay (Promissory Note) the student electronically agrees to provide detailed information about the student's financial obligation and also the consequences of default of that obligation. Unpaid accounts may be referred to a collection agency, reported to credit bureau(s), and/or the student may be subject to legal action. In either case, the student will be responsible for any and all expenses incurred, including attorney fees. Students will bear the University's costs and fees associated with all collection activity resulting from the student's failure to make payment under the agreement they will sign each term.

Fees

Special Service Fees may be charged for University transactions that are processed beyond deadlines, due dates, and specified time limits. Special service fees are listed each term in the Schedule of Classes.

Course Fees are associated with certain courses and will be charged when the student enrolls in those courses. These courses are identified in the Schedule of Classes and Course Descriptions. Course fee information is also available on the Academic Regulations page.

Late Payment Fees are charged when students make payment after the published due date for their charges for the term.

Payments and Credit Balance Refunds

PittPAY is the University's online financial portal for students and the Authorized Users that students have designated as having access to their financial information.

Payments may be made in PittPAY by electronic check (eCheck) or by credit or debit card. While there is no charge for eCheck transactions, our vendor will charge a non-refundable 2.75% convenience fee for all debit or credit card payments. Check payments can be mailed to the address on the Remittance Form at the bottom of the Term Statement, which students and Authorized Users can generate and print themselves.

International Payments can be processed in PittPAY through the University's partnership with Flywire. Flywire offers a streamlined and cost effective way for students and Authorized Users to make international payments on the student account from almost any country, in most currencies.

PittPAY Payment Plans are available for those who elect to make payments in a series of monthly installments, instead of one payment by the due date. Participation in a payment plan is optional. To view available payment plan offers, go to the Payment Plans tab in PittPAY.

eRefunds are automatic refunds of credit balances from the student account. Credit balances occur when payments to the account, including the disbursement of loans and financial aid, exceed the amount you owe. Students and Authorized Users who are Parent PLUS loan borrowers, go to the eRefund tab in PittPAY to designate the checking or savings account where your credit balances should be directly deposited.
Due Date Schedule

Periodic Balance Due Notifications are sent by email and text to students and their Authorized Users from pittpay@pitt.edu when there is a balance due on the student account. To view and edit your email and mobile phone number settings for these notifications, login to PittPAY, select Actions, then Manage Notifications.

<table>
<thead>
<tr>
<th>Term</th>
<th>Periodic Balance Due Notifications Begin</th>
<th>Balance is Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 2018</td>
<td>April 25, 2018</td>
<td>May 20, 2018</td>
</tr>
<tr>
<td></td>
<td>May 23, 2018</td>
<td>June 20, 2018</td>
</tr>
<tr>
<td></td>
<td>June 20, 2018</td>
<td>July 20, 2018</td>
</tr>
<tr>
<td>Fall 2018</td>
<td>July 25, 2018</td>
<td>September 19, 2018</td>
</tr>
<tr>
<td>Spring 2019</td>
<td>November 28, 2018</td>
<td>January 23, 2019</td>
</tr>
</tbody>
</table>

As soon as you make an online payment in PittPAY, your balance due will be updated to reflect the payments. You can view your payment receipt in Transaction History. Late fees, collection costs, and financial holds are placed on past due accounts.

Tuition Rates - Pennsylvania Residents

<table>
<thead>
<tr>
<th>School</th>
<th>Full-Time Per Academic Year</th>
<th>Full-Time Per Term</th>
<th>Part-Time Per Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietrich School of Arts and Sciences, School of Education and Graduate School of Public Health and International Affairs</td>
<td>$22,846</td>
<td>$11,423</td>
<td>$920</td>
</tr>
<tr>
<td>Graduate School of Public and International Affairs (except as follows)</td>
<td>$22,846</td>
<td>$11,423</td>
<td>$920</td>
</tr>
<tr>
<td>Nursing/GSPIA Program</td>
<td>$26,788</td>
<td>$13,394</td>
<td>-----</td>
</tr>
<tr>
<td>School of Social Work (except as follows)</td>
<td>$22,846</td>
<td>$11,423</td>
<td>$920</td>
</tr>
<tr>
<td>MSW/MBA Program</td>
<td>$30,376</td>
<td>$15,188</td>
<td>-----</td>
</tr>
<tr>
<td>Joseph M. Katz Graduate School of Business (except as follows)</td>
<td>$30,376</td>
<td>$15,188</td>
<td>$1,308</td>
</tr>
<tr>
<td>MBA: One-Year Program; MBA/MOIS Full-Time Program (for three terms)</td>
<td>$45,564</td>
<td>$15,188</td>
<td>$1,308</td>
</tr>
<tr>
<td>MBA: Two-Year Program; MBA Part-Time Program; MBA/MOIS Part-Time Program</td>
<td>$22,782</td>
<td>$11,391</td>
<td>$1,308</td>
</tr>
<tr>
<td>All MS programs</td>
<td>$29,252</td>
<td>$14,626</td>
<td>$1,110</td>
</tr>
<tr>
<td>JD/MBA Program</td>
<td>$41,762</td>
<td>$20,881</td>
<td>-----</td>
</tr>
<tr>
<td>MSW/MBA Program</td>
<td>$30,376</td>
<td>$15,188</td>
<td>-----</td>
</tr>
<tr>
<td>Program</td>
<td>Graduate (except as follows)</td>
<td>Graduate (MS, PhD, in Oral Biology)</td>
<td>Doctorate - Professional Practice</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------------------------</td>
<td>-------------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>MHA/MBA Program</td>
<td>$27,866</td>
<td>$13,933</td>
<td>$1,243</td>
</tr>
<tr>
<td>The EMBA program is a five-term program. The total cost for new students first entering in May 2019 and after is $80,000.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The EMBA in Healthcare program is a five-term program. The total cost for new student who enter in May 2019 is $95,000.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swanson School of Engineering</td>
<td>$26,224</td>
<td>$13,112</td>
<td>$1,243</td>
</tr>
<tr>
<td>School of Law</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate (MSL)</td>
<td>$33,944</td>
<td>$16,972</td>
<td>$1,280</td>
</tr>
<tr>
<td>Graduate (LLM)</td>
<td>$39,000</td>
<td>$19,500</td>
<td>$1,243</td>
</tr>
<tr>
<td>Doctorate - Professional Practice (JD)</td>
<td>$33,944</td>
<td>$16,972</td>
<td>$1,280*</td>
</tr>
<tr>
<td>*Applicable to courses outside the curriculum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School of Computing and Information</td>
<td>$24,022</td>
<td>$12,011</td>
<td>$977</td>
</tr>
<tr>
<td>School of Dental Medicine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate (except as follows)</td>
<td>$51,064</td>
<td>$25,532</td>
<td>$2,108</td>
</tr>
<tr>
<td>Graduate (MS, PhD, in Oral Biology)</td>
<td>$26,784 (for three terms)</td>
<td>$8,928</td>
<td>$1,090</td>
</tr>
<tr>
<td>Doctorate - Professional Practice</td>
<td>$47,518</td>
<td>$23,759</td>
<td>$1,040*</td>
</tr>
<tr>
<td>*Applicable to courses outside the curriculum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School of Nursing (except as follows)</td>
<td>$26,136</td>
<td>$13,068</td>
<td>$1,064</td>
</tr>
<tr>
<td>Nursing/GSPIA Program - on campus and online</td>
<td>$26,136</td>
<td>$13,068</td>
<td>$1,064</td>
</tr>
<tr>
<td>School of Pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate (except as follows)</td>
<td>$26,788</td>
<td>$13,394</td>
<td>$1,090</td>
</tr>
<tr>
<td>Doctorate - Professional Practice (PharmD)</td>
<td>$31,816</td>
<td>$15,908</td>
<td>$1,228*</td>
</tr>
<tr>
<td>The MSPBA Program is a three-term program. The total cost for new students who entered in January 2019 and after is $58,050.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Applicable to courses outside the curriculum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate School of Public Health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate (except as follows)</td>
<td>$26,788</td>
<td>$13,394</td>
<td>$1,090</td>
</tr>
</tbody>
</table>

*Applicable to courses outside the curriculum
## Mandatory Fees

### Graduate and Doctorate-Professional Practice

<table>
<thead>
<tr>
<th>Fee</th>
<th>Full-Time Per Academic Year</th>
<th>Full-Time Per Term</th>
<th>Part-Time Per Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Activity Fee</td>
<td>$60</td>
<td>$30</td>
<td>$15</td>
</tr>
<tr>
<td>Wellness Fee</td>
<td>$260</td>
<td>$130</td>
<td>$65</td>
</tr>
<tr>
<td>Computing and Network Services Fee</td>
<td>$350</td>
<td>$175</td>
<td>$100</td>
</tr>
<tr>
<td>Security, Safety, and Transportation Fee</td>
<td>$180</td>
<td>$90</td>
<td>$90</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$850</td>
<td>$425</td>
<td>$270</td>
</tr>
</tbody>
</table>

### Tuition Rates - Out-of-State Residents

<table>
<thead>
<tr>
<th>School</th>
<th>Full-Time Per Academic Year</th>
<th>Full-Time Per Term</th>
<th>Part-Time Per Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Description</td>
<td>Tuition</td>
<td>Fees</td>
<td>Other</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>Dietrich School of Arts and Sciences, School of Education Graduate School of Public Health and International Affairs</td>
<td>$38,736</td>
<td>$19,368</td>
<td>$1,583</td>
</tr>
<tr>
<td>Graduate School of Public and International Affairs (except as follows)</td>
<td>$38,736</td>
<td>$19,368</td>
<td>$1,583</td>
</tr>
<tr>
<td>Nursing/GSPIA Program (except online)</td>
<td>$31,990</td>
<td>$15,995</td>
<td>$1,306</td>
</tr>
<tr>
<td>School of Social Work (except as follows)</td>
<td>$31,990</td>
<td>$15,995</td>
<td>$1,306</td>
</tr>
<tr>
<td>MSW/MBA Program</td>
<td>$42,610</td>
<td>$21,305</td>
<td>---</td>
</tr>
<tr>
<td>Joseph M. Katz Graduate School of Business (except as follows)</td>
<td>$42,608</td>
<td>$21,304</td>
<td>$2,024</td>
</tr>
<tr>
<td>MBA One-Year Program; MBA/MOIS Full-Time Program</td>
<td>$63,912 <em>(for three terms)</em></td>
<td>$21,304</td>
<td>$2,024</td>
</tr>
<tr>
<td>MBA: Two-Year Program; MBA Part-Time Program</td>
<td>$31,956</td>
<td>$15,978</td>
<td>$2,024</td>
</tr>
<tr>
<td>All MS Programs</td>
<td>$40,500</td>
<td>$20,250</td>
<td>$1,616</td>
</tr>
<tr>
<td>JD/MBA Program</td>
<td>$55,244</td>
<td>$27,622</td>
<td>---</td>
</tr>
<tr>
<td>MSW/MBA Program</td>
<td>$42,610</td>
<td>$21,305</td>
<td>---</td>
</tr>
<tr>
<td>MHA/MBA Program</td>
<td>$43,344</td>
<td>$21,672</td>
<td>---</td>
</tr>
</tbody>
</table>

The EMBA program is a five-term program. The total cost for new students first entering in May 2019 and after is $80,000.

The EMBA in Health-care program is a five-term program. The total cost for new student who enter in May 2019 is $95,000.

<table>
<thead>
<tr>
<th>Program Description</th>
<th>Tuition</th>
<th>Fees</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swanson School of Engineering</td>
<td>$44,474</td>
<td>$22,237</td>
<td>$2,103</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program Description</th>
<th>Tuition</th>
<th>Fees</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Law</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate (MSL)</td>
<td>$43,686</td>
<td>$21,843</td>
<td>$1,914</td>
</tr>
<tr>
<td>Graduate (LLM)</td>
<td>$39,000</td>
<td>$19,500</td>
<td>---</td>
</tr>
<tr>
<td>Doctorate - Professional Practice (JD)</td>
<td>$43,686</td>
<td>$21,843</td>
<td>$1,914*</td>
</tr>
</tbody>
</table>

*Applicable to courses outside the curriculum*

<table>
<thead>
<tr>
<th>Program Description</th>
<th>Tuition</th>
<th>Fees</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Computing and Information</td>
<td>$40,732</td>
<td>$20,366</td>
<td>$1,674</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program Description</th>
<th>Tuition</th>
<th>Fees</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Dental Medicine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate (except as follows)</td>
<td>$62,612</td>
<td>$31,306</td>
<td>$2,593</td>
</tr>
<tr>
<td>Graduate (MS, PhD, in Oral Biology)</td>
<td>$31,989 <em>(for three terms)</em></td>
<td>$10,663</td>
<td>$1,306</td>
</tr>
<tr>
<td>Program Description</td>
<td>Graduate Tuition</td>
<td>Professional Practice Tuition</td>
<td>Medical Education Tuition</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------</td>
<td>-------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Doctorate - Professional Practice</td>
<td>$56,978</td>
<td>$28,489</td>
<td>$1,576*</td>
</tr>
<tr>
<td>School of Nursing (except as follows)</td>
<td>$31,990</td>
<td>$15,995</td>
<td>$1,306</td>
</tr>
<tr>
<td>School of Pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate (except as follows)</td>
<td>$28,572</td>
<td>$14,286</td>
<td>$1,165</td>
</tr>
<tr>
<td>Doctorate - Professional Practice (PharmD)</td>
<td>$36,582</td>
<td>$18,291</td>
<td>$1,412*</td>
</tr>
<tr>
<td>The MSPBA Program is a three-term program. The total cost for new students who entered in January 2019 and after is $58,050.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Applicable to courses outside the curriculum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate School of Public Health (except as follows)</td>
<td>$45,452</td>
<td>$22,726</td>
<td>$1,861</td>
</tr>
<tr>
<td>MHA/MBA Program</td>
<td>$43,344</td>
<td>$21,672</td>
<td>$2,024</td>
</tr>
<tr>
<td>School of Medicine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate</td>
<td>$43,110</td>
<td>$21,555</td>
<td>$1,766</td>
</tr>
<tr>
<td>Doctorate - Professional Practice</td>
<td>$58,186</td>
<td>$29,093</td>
<td>$1,334*</td>
</tr>
<tr>
<td>*Applicable to courses outside the curriculum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School of Health and Rehabilitation Sciences (except for Doctor of Physical Therapy Program)</td>
<td>$45,452</td>
<td>$22,726</td>
<td>$1,861</td>
</tr>
<tr>
<td>Rates for out-of-state residents in the following programs:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate programs in: Clinical Rehabilitation and Mental Health Counseling (MS); Communication Science and Disorders (MA, MS); Coordinated Master's in Nutrition and Dietetics (MS); Occupational Therapy (MOT); Physician Assistant Studies (MS); Prosthetics and Orthotics (MS).</td>
<td>$31,990</td>
<td>$15,995</td>
<td>$1,306</td>
</tr>
<tr>
<td>Doctorate-Professional Practice program in: Audiology (AuD); Occupational Therapy (CSCD, DOT); Speech-Language Pathology (CSCD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor of Physical Therapy Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The SHRS Doctor of Physical Therapy (DPT) Program is a full-time, three-year, three-terms-per-year program. Tuition will be billed at the flat rate for the entire three-year program. The three-term cost for students first entering in May 2019 is $49,185.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mandatory Fees**

**Graduate and Doctorate-Professional Practice**
<table>
<thead>
<tr>
<th>Fee</th>
<th>Full-Time Per Academic Year</th>
<th>Full-Time Per Term</th>
<th>Part-Time Per Term</th>
</tr>
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<tr>
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<td>$180</td>
<td>$90</td>
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</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$850</strong></td>
<td><strong>$425</strong></td>
<td><strong>$270</strong></td>
</tr>
</tbody>
</table>
Kenneth P. Dietrich School of Arts and Sciences

Graduate programs in the Dietrich School of Arts and Sciences (A&S) are designed to prepare students for careers in research and teaching in the humanities, natural sciences, and social sciences responsive to the evolving needs of the private and public sectors of society as well as to the particular interests of academia.

A&S Graduate Studies has final approval over all admissions to graduate study in A&S and overall student appointments as teaching assistants, teaching fellows, graduate student assistants, A&S fellows, and graduate student researchers, as well as responsibility for processing all related tuition scholarships. It reviews and records the academic progress of graduate students, including the passing of comprehensive examinations, admissions to doctoral candidacy, and final oral examinations. It verifies the completion of theses and dissertations, and certifies all graduate degrees awarded in the Dietrich School of Arts and Sciences.

Contact Information

Questions regarding admissions, teaching and research appointments, and programs of study should be addressed first to the individual graduate department or program. Questions regarding registration, tuition scholarships for teaching or research assistants, and graduate status should be addressed to:

Dietrich School of Arts and Sciences-Graduate Studies
Student Services
5141 Sennott Square
412-624-6094
Fax: 412-624-6855
E-mail: graduate@as.pitt.edu
www.asgraduate.pitt.edu

Admissions

A&S offers MA, MFA, and PhD degrees and certificate programs in the humanities; MA, MS, and PhD programs in the natural sciences; and MA and PhD programs in the social sciences. Several dual and joint degree programs are available.

Students applying for admission should proceed as follows:

Interested applicants are encouraged to go to the School of Arts and Sciences graduate Web page at www.asgraduate.pitt.edu and to visit Web pages of their departments of interest. Students should complete the online application through the ApplyYourself Application Network from the departments’ Web pages. The online application is automatically sent to the appropriate department for processing.

Deferred Admission

Admission to graduate study is valid for the academic year. If a department so approves, a student may defer admission for one year without having to complete any additional applications. If approved, the student is sent a new admission letter. Additional course work taken during the deferred year and a new affidavit of financial support should also accompany any financial aid request. The deferral of admission is independent of financial aid.

Transferring Between A&S Departments

A student desiring to change a major department of graduate study in A&S must file an application for admission in the department of intended graduate study. Applications for transfer will be evaluated in the same way as applications for admission to the designated department. An application fee is not required.
Admission of International Students

Before reading the A&S-specific details below, see the Graduate Admissions of International Students section for a complete overview of University admissions requirements, including TOEFL or IELTS scores, for students from other countries.

The Dietrich School of Arts and Sciences minimum TOEFL score of 90 (with at least a score of 22 in all of the four sections of speaking, listening, reading, and writing) will be required. The required minimum IELTS score of 7.0 (with at least 6.5 in each of its four sections) will be required.

Students should apply online using the ApplyYourself Application Network available from the department's Web site. The online application is automatically sent to the appropriate department for processing. All applicants should take note of specific departmental requirements, in addition to those required of all international students. A&S Graduate Studies, Student Services (in 5141 Sennott Square) will determine whether or not an applicant has sufficient proficiency in English.

International Student Application Deadlines and Application Fee

The deadlines for submitting a completed application and financial aid form are determined by the individual departments, but due to delays in the issuance of visas it is recommended that international students apply as early as possible, preferably at least six months prior to the start of the term of admittance, so that paperwork can be processed in a timely manner.

The application fee for all students is $50. The fee must be submitted in the form of a check or money order made payable to the University of Pittsburgh or may be paid using a credit card when applying online.

Admission Status

For an overview of the requirements for the three admission statuses-full, provisional, and special-see Admissions Status in the application for admission section of this bulletin.

Full Graduate Status

Only students in full graduate status may undergo preliminary evaluations, take comprehensive examinations, be advanced to degree candidacy, or receive teaching assistantships or fellowships.

Provisional Graduate Status

Transfer from provisional to full graduate status is possible only upon formal recommendation of the student's department and after:

1. removal of deficiencies noted at the time of admission, with A or B grades, and/or
2. completion of four courses (12 credits) for which graduate credit is earned with at least a 3.00 average.

Special Status

A special status student who takes courses while not seeking an advanced degree may transfer up to four courses (12 credits) taken while on special status to a degree program if the student is subsequently admitted into one, and if the department recommends the transfer. A transferred course must carry a grade of B or better.

Those special status students who earn graduate credits while on temporary admission may apply those credits toward degree requirements.

Early Admission Program
Exceptionally able students in Arts and Sciences at the University of Pittsburgh (GPA of 3.50 or above) with strong letters of recommendation from faculty in the department to which they are applying may be admitted to full graduate status in a department in A&S. At the time of admission, students must have completed 96 credits toward the baccalaureate degree, the final 30 of which must have been taken in A&S, and must have satisfied the general education requirement, second language requirement (if any), and academic major requirements (as certified by A&S). For additional information regarding requirements for the completion of the baccalaureate degree, see the A&S section in the University of Pittsburgh Undergraduate Bulletin.

Inactive Status/Readmission

For detailed information on what constitutes inactive registration status and requirements for readmission to active status, please see Registration Status and Readmission, respectively.

Applications for readmission to A&S should be received according to the following schedule:

- Fall term readmission applications by August 1
- Spring term readmission applications by December 1
- Summer term and/or sessions by April 1

Financial Assistance

Financial assistance for graduate students is provided in the form of teaching and research appointments, fellowships, traineeships, tuition scholarships, and loans. Application for financial aid should be made on the regular Application for Admission to Graduate Study form except in special cases as noted below. All applications for financial assistance are reviewed at the departmental level and awards are made to the extent of available funds. Admission to graduate study does not carry any implications concerning the award of financial aid. Only students with full graduate status are eligible for teaching assistantships and fellowships.

Information concerning nationally competitive grants and fellowships is available to University of Pittsburgh Students through the Office of Research Web site at http://www.asgraduate.pitt.edu/financial-assistance.

Teaching and Research Appointments

Each year about 665 graduate students receive teaching appointments and fellowships in departments offering graduate degrees in the Dietrich School of Arts and Sciences to assist in undergraduate instruction in Arts and Sciences and the College of General Studies. In addition to financial support and medical coverage, these appointments provide teaching experience and further professional development.

In recognition of academic merit, the University offers teaching assistants (TA), teaching fellows (TF), graduate student assistants (GSA), and graduate student researchers (GSR) full or proportional tuition scholarships, and students are required to register for the number of credits proportional to appointment. If appointed in the summer term, students should register for a minimum of 3 credits (or full-time dissertation study, if eligible), unless additional registration is needed for academic purposes.

Information regarding TA/TF/GSA/GSR policies is available at www.pitt.edu/~graduate/tapolicyrev.htm and at A&S Graduate Studies, Student Services in 5141 Sennott Square. For further information on these positions and general descriptions of each appointment's job requirements, see Financial Aid, Teaching and Research Appointments of this bulletin.

Teaching Assistants (TA)

For completion of services requiring approximately 20 hours per week, a TA receives a salary for two terms. Two-term TAs who want to receive their salary spread out across three terms should contact their department immediately.

Teaching Fellows (TF)
For teaching services, requiring about 20 hours per week, a TF receives a salary for the term of their contract, either one or two terms. Two-term TFs who want to receive their salary spread out across three terms should contact their department immediately.

**Graduate Student Assistants (GSA)**

A few graduate student assistantships are available in A&S. A GSA usually assists a faculty member in library research, editorial duties, or similar academic tasks. For such services, requiring about 20 hours per week, a GSA receives a salary for the term of their contract, either one or two terms. Two-term GSAs who want to receive their salary spread out across three terms should contact their department immediately.

**Graduate Student Researchers (GSR)**

The GSRs work under the direct supervision of and are appointed by the principal investigator (or associate) of a funded research project. Their stipends are determined by the terms of the grant within guidelines set by the associate dean for graduate studies and research.

**Fellowships and Traineeships**

Fellowships and traineeships available to students in the School of Arts and Sciences can be found at www.asgraduate.pitt.edu/financial-assistance.

**Academic Standards**

In addition to those University-wide regulations and standards detailed in the section on General Academic Regulations, each student in A&S is expected to be familiar with these school-specific regulations and academic standards:

**Credits and Grade Points**

Courses for which a G, I, N, R, or W grade is recorded and courses numbered below 1000 (0-0999) do not contribute either credits or grade points toward graduation. When a course is repeated, only the last grade and credits are used to calculate the GPA.

Students must achieve the minimum GPA established by their departments, in no case less than 3.00, in order to be eligible to retain teaching assistantships or fellowships, to undergo the preliminary evaluations, to take comprehensive examinations, to be admitted to candidacy for the PhD degree, and to graduate.

Independent study and individual thesis and dissertation research must be graded using the S/NC option (formerly the S/N option) and thus are not used in the calculation of the GPA required for continuation in good academic standing.

**Academic Probation and Dismissal**

A graduate student who fails to maintain an overall GPA of 3.00 or to make satisfactory progress in a degree program is subject to dismissal from graduate study at the University. When the overall GPA of a student falls below 3.00, the student is automatically placed on academic probation; is not eligible for a teaching assistantship, fellowship, or participation in the department comprehensive examination; and is subject to dismissal at the end of the following term. The department should so warn the student in writing.

In addition, any student who is not making satisfactory progress toward the completion of an advanced degree (completion of an acceptable number of required courses and/or research each term or year) may be placed on academic probation by the department. The student must be informed in writing of this action by the department. Normally, one term will be granted in which to correct the deficiency.

A student whose performance on a preliminary or comprehensive examination is judged to be inadequate may be subject to dismissal at the end of the term.
Withdrawal from Courses

Students may add or drop courses before the end of the add/drop period. A student who wishes to withdraw from an individual course after the add/drop period must complete a Monitored Withdrawal form available from the dean of the school offering the course, obtain the signature of the instructor, and return the completed form to the assistant dean of graduate studies, 5141 Sennott Square. A W grade will then be issued.

Students may terminate their registration in all classes by informing the Office of the University Registrar of their intent to do so prior to the end of the add/drop period for the term. Students registered for courses scheduled to begin after the end of the add/drop period for the term may terminate their registration by informing the Office of the University Registrar of their intent to do so at any time prior to the first scheduled meeting day of the class. A student who stops attending a course and does not initiate the withdrawal or resignation procedures may be assigned an F grade.

Repetition of Courses

A student may repeat any course in which a grade of B- or lower is received if authorization is given by the student's department. When a graduate student repeats a course in which the subject matter has not changed, only the last grade received is counted in computing the grade point average. A Course Repeat form must be filed with A&S Graduate Studies, Student Services, 5141 Sennott Square, to initiate proper computing of the grade point average.

Grade Changes

A grade given by an instructor for completed work will not be changed unless an error has been made in reporting or recording the grade. (Reexamination or extra work may not be used as a basis for a change of grade.) A Grade Change Request form must be filed with A&S Graduate Studies, Student Services, 5141 Sennott Square, and approved by the assistant dean of graduate studies.

Independent Study

Students who are using University facilities to an extent greater than represented by their formal course load (and those students required by a fellowship or other appointment to be full-time students) are required to register for an appropriate number of additional credits of Independent Study to reflect their correct status. All graduate study not under the direct supervision of a specific faculty member is, by definition, Independent Study, course number 2990 in each program. This includes study for preliminary evaluations, comprehensive and overview examinations, the preparation of research proposals, etc. Only the S/NC Grade Option (formerly the S/N option) may be used in a 2990 course.

Directed Study

Registration for Directed Study is limited to students in good academic standing and normally beyond their first year of graduate study who wish to study or carry out a project in an area not available in a formal course. The work must be under the direct supervision of a faculty member who has approved the proposed work in advance of registration. A brief description of the work should be recorded in the student's file in the department. Either a letter grade or the S/NC option (formerly the S/N option) may be used to evaluate the quality of work performed by the student, and both the credits and the grade points (if any) will be used in determining the academic standing of the student.

Transfer Credits

Students may transfer credits earned at another accredited institution in an approved degree-granting graduate program toward the requirements for an advanced degree at the University of Pittsburgh. Students requesting advanced-standing credits by transfer should indicate this within the first year of graduate study and provide official transcripts. The department evaluates each applicant's credentials and indicates to the student at the time of admission its recommendation to the assistant dean of graduate studies concerning advanced-standing credit. Credits for course work taken 10 or more years prior to admission for graduate study at the University of Pittsburgh are not automatically transferred for PhD students. For Master's students, credits for course work taken four or more years prior to admission for graduate study at the University of Pittsburgh are not automatically transferred. Departments must evaluate such coursework in terms of its currency of knowledge in the field when submitting transfer credit requests for approval by A&S. Students admitted with special or provisional status cannot transfer credits until full status has been granted. Graduate students
already enrolled, when approved in advance by their department and the assistant dean of graduate studies, may spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and may transfer those credits toward the requirements for an advanced degree at the University of Pittsburgh.

A maximum of 6 credits may be accepted by transfer toward the requirements for the master's degree. A maximum of 24 credits may be transferred toward the requirements for the PhD degree for course work at the master's level earned in another approved graduate school. A student who transfers 24 credits due to completion of a master's degree at another institution is not eligible to earn a master's degree in that discipline at the University of Pittsburgh. If a student has completed relevant graduate work beyond the master's level at another institution, up to 12 additional credits may be accepted for transfer. (No more than 36 credits can be accepted for transfer from all other graduate institutions.) Acceptance of credits by transfer from other graduate schools does not relieve the student from the requirement to register at the University of Pittsburgh and satisfactorily complete a minimum of 18 credits for a master's degree and a minimum of 36 credits for a PhD degree.

For further detail on University requirements on transfer credits, see Acceptance of Transfer Credits under the allowable credits section of this bulletin.

Registration of Undergraduate Students for Graduate Credit

University of Pittsburgh undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree in A&S may be permitted, during their final term, to register for one or two courses at the 2000 level for credit toward a graduate degree. Students must obtain written permission from an A&S department admissions officer that the course may count when and if they are admitted into the degree program. This privilege should not be granted if the proposed total course program exceeds a normal full-time load or if the courses are required for the undergraduate degree. When students register for graduate study at the University, these graduate credits and grades may be transferred to the graduate transcript upon recommendation of the department and approval by the assistant dean of graduate studies. No more than 6 credits can be transferred in this manner.

Statute of Limitations and Leaves of Absence

All regulations regarding the statute of limitations for completion of degree requirements and leaves of absence are detailed under Statute of Limitation/Leaves of Absence of this bulletin. Variations and additions to those rules within A&S are as follows:

Requirements for the master's degree should be completed within a period of four consecutive calendar years from the student's initial registration for graduate study. Requirements for the PhD degree must be completed within a period of 10 years from the student's initial registration, or within eight years if the student has received a previous master's degree. Some departments may have a more stringent statute of limitations for completion of master's or doctoral degrees. There is also a strictly enforced limit of four calendar years on the master's comprehensive examination or its equivalent for students beginning or readmitted for graduate study in fall 2002 or later, and a seven-calendar-year limit on the PhD comprehensive examination for students entering graduate study programs in fall 1999 or later. (Ten-year limits on PhD comprehensive examinations apply for doctoral students enrolled prior to fall 1999.) If the student has not completed all requirements for the master's or doctoral degrees within the time limits on comprehensive examinations for degrees as specified above, the comprehensive examination for the degree must be retaken in order to graduate.

Under exceptional circumstances a candidate for an advanced degree may apply for an extension of the statute of limitations. Applications are available in the department or in A&S Graduate Studies, Student Services, 5141 Sennott Square. They must state the reason for the delay, provide evidence of continuing progress toward the completion of the degree, and include a detailed plan of study and proposed date for completion. The request must be approved by the chair of the student's doctoral or master's committee and the department chair or director of graduate studies and be submitted to the assistant dean of graduate studies for final action. Each student who requests an extension of the statute of limitations must be able to demonstrate proper preparation for the completion of all current degree requirements. There is no extension on the time limits for the master's and doctoral comprehensive examinations.

Under special conditions, graduate students may be granted a leave of absence. Only one leave of absence can be obtained by students during their graduate career. Readmission following an approved leave of absence is a formality.

Advising and Placement

Advising and placement services in A&S graduate programs are conducted within the various departments and programs. Students should consult department handbooks, their departmental advisor, their departmental director of graduate studies, their departmental graduate administrator, and/or
the chair for details. The A&S Graduate Studies Office makes every effort to keep advising and placement in the forefront of departmental concerns. All departments are responsible, with A&S oversight, for implementing policies and practices consistent with the University's in Elements of Good Academic Advising. Unresolved problems relating to the advising of graduate students at the department level can be taken to the assistant dean of graduate studies and research in A&S Graduate Studies, Student Services, 5141 Sennott Square.

A&S Degree Requirements

The general requirements for the master's degrees and doctoral degrees are detailed under Regulations Pertaining to Master of Arts and Master of Science Degrees, Regulations Pertaining to Professional Master's Degrees (including the MFA), and Regulations Pertaining to Doctoral Degrees. For further A&S-specific requirements, see below. Once the University-wide requirements and the A&S Degree Requirements below have been reviewed, see the relevant departmental description for more specific detail.

Requirements for the MA, MS, and MFA Degrees

The minimum requirement for the Master of Art and Master of Science degrees is 30 credits beyond the baccalaureate degree. Furthermore, the MFA, as a professional degree, requires a minimum of 36 credits. Not more than 6 credits may be granted toward the completion of the requirements for a master's degree for work completed at another accredited graduate institution. Most programs require more than this minimum.

Credit Requirements

In addition to the general credit requirements detailed under MA and MS Requirements at the front of this bulletin, the following requirements must be satisfied:

- Completion of 12 credits from the 2000 or 3000 series with a grade of B or higher.
- All courses from the 2000 or 3000 series must be completed with an average grade of B (3.00)
- Registration for research, independent study, or directed study cannot be included among the minimum of 12 credits that must be taken from the 2000 or 3000 series with a grade of B or higher
- Independent study credits do not count towards the MA/MS/MFA degrees

Second Language Requirement

The requirement of proficiency in second languages is at the discretion of individual departments.

Comprehensive Examination

Whenever a program substitutes an equivalent requirement for the comprehensive examination, the department or program must obtain prior approval from the A&S Graduate Council and notify the University Council on Graduate Study and describe the situation. Students on inactive, special, or provisional status, or who have a GPA less than 3.00, are not eligible to take the comprehensive examination. See Comprehensive Examination under Regulations Pertaining to Master of Arts and Master of Science Degrees for further detail on requirements for comprehensive exams.

Thesis

The requirement of a thesis or its equivalent is at the discretion of individual departments. If a thesis is submitted, its form must be in accord with specifications available from The ETD Format Guidelines Manual and approved by the assistant dean of graduate studies. A report of the final oral examination in defense of the master's thesis must be filed in 5141 Sennott Square. For further information on thesis requirements, including the make up of the thesis committee, see Thesis Option under Regulations Pertaining to Master of Art and Master of Science Degrees.
Application for Graduation

Each candidate for graduation must file an official Application for Graduation in 5141 Sennott Square, early in the term in which graduation is expected. (See your graduate secretary for deadline dates.) See Graduation under General Academic Regulations for further details on graduation and graduation requirements.

Graduation Certification

The faculty of the department evaluates the performance in course work and on comprehensive examinations. If the candidate's performance is satisfactory and all degree requirements have been met, a letter must be submitted to the associate dean for graduate studies and research, on behalf of the department, certifying that the candidate has completed all requirements for a master's degree and indicating whether or not the candidate is recommended to proceed to doctoral study.

Requirements for the PhD Degree

An overview of the University requirements for the PhD degree is presented in Regulations Pertaining to Doctoral Degrees. A&S-specific requirements are detailed below.

Credit Requirements

The minimum requirement for the PhD degree of 72 credits may be earned in formal course work, directed study, independent study, and/or thesis and dissertation research.

Course Requirements

No course numbered below 1000 may be applied toward a graduate degree and no more than 12 credits of 1000 level can count towards a doctoral degree.

Students must achieve the minimum GPA established by their departments, in no case less than 3.00, to be eligible to undergo the preliminary examination, to take the comprehensive examination, to be admitted to candidacy for the PhD degree, and to be graduated.

Second Language and/or Other Tools of Research

The requirement of proficiency in the use of second languages or other tools of research is at the discretion of individual departments. The second language departments have the capacity to evaluate second language proficiency and will be available to so certify.

Preliminary Examination

The nature of the preliminary examination/evaluation and the time when it is conducted are determined by each department. In some programs, the preliminary doctoral exam/evaluation may be combined with a master's comprehensive examination. See Preliminary Evaluation under Regulations Pertaining to Doctoral Study for further details on regulations pertaining to the exam. Students must be registered in the term they are completing the Preliminary Examination.

Comprehensive Examination

Comprehensive examination results must be reported promptly to A&S Graduate Studies, Student Services, 5141 Sennott Square, and no later than the last day of the term in which the examination is administered. Students must be enrolled in the term in which they are completing the
Comprehensive Examination. See Comprehensive Examination under Regulations Pertaining to Doctoral Study for further detail on regulations regarding the exam.

**Doctoral Committee**

Doctoral dissertation committees are composed of four members, three of whom must be Graduate Faculty with either a primary appointment in the candidate's department or a secondary/joint appointment in the candidate's department and a primary/joint appointment in another relevant department within the University of Pittsburgh ("internal members"). The fourth member must be Graduate Faculty external to the candidate's department within the University of Pittsburgh or a qualified scholar with an equivalent status at another accredited institution ("external member"). The Graduate Faculty Roster for the University of Pittsburgh can be viewed at the following website: https://ir.pitt.edu/graduate-faculty-roster/. Membership in the Graduate Faculty is not automatic and must be formally requested by the faculty member's department and approved by the Associate dean for Graduate Studies before the faculty member can serve on a doctoral dissertation committee. The Chair of the committee must be a current (or recently departed) member of the University of Pittsburgh. Any member may serve as Co-Chair.

**Notification of Committee Membership**

The names of the committee members must be submitted to the Graduate Studies Office as part of the application for candidacy by the graduate student. All requests for subsequent changes to the committee should be submitted for approval to the Graduate Studies Office by the Graduate Administrator for the candidate's department. Any changes to the committee membership, internal or external, after the dissertation proposal/prospectus/overview meeting must be approved by the Assistant Dean for Graduate Studies before the dissertation defense. Forms for admission to candidacy and committee changes can be obtained by the Graduate Administrator in the A&S Graduate Handbook.

**Special Requirements for External**

Faculty from outside the University of Pittsburgh may serve as external committee members, but the qualifications of the proposed committee member must be reviewed and their participation approved by the Assistant Dean for Graduate Studies before the dissertation proposal/prospectus/overview meeting or defense is scheduled. Such a request should be accompanied by the requested committee member's current CV and a brief memo that explains the benefits for the student of the participation of this faculty member on the committee. CVs for external committee members who have been approved previously by the Assistant Dean for a particular department's graduate students need only be resubmitted once every five years. In this case, however, the memo accompanying each request for an external member's participation in a new committee must also note the date on which the CV was last submitted for this individual. If the date is not known, a new CV must be included. Requests for external members must be approved by the Assistant Dean in advance of the requested member's participation on the doctoral committee. The Assistant Dean will review the material and either approve or reject the proposed external member.

**Additional Committee Members**

Additional members may be added to the doctoral committee in cases where additional expertise is needed. Such additional committee members are expected to have significant involvement with the graduate student and to attend both the proposal/prospectus/overview meeting and the defense unless prior approval has been received for remote attendance. For additional committee members only, the Graduate Faculty status (or the equivalent at another institution) requirement may be waived if prior approval from the Assistant Dean is requested and granted. Such a request should be accompanied by a brief memo that explains the benefits for the student of the participation of this faculty member on the committee and, in the case of a member who is not from the University of Pittsburgh, a current CV. The CV need only be provided every five years for committee members serving on multiple committees within the same department.

**Committee Participation by Former Members of the University of Pittsburgh Faculty**

Committee members who leave the university after a graduate student has been admitted to candidacy may stay on the committee in their original capacity, as long as they are willing and able to physically attend the defense (or have requested and received permission to attend remotely as described below), and providing that the defense is scheduled within 12 months of the faculty member's departure. If the departed committee member is the Chair, and continues in this role, a Co-Chair from the department must be designated. The participation of any committee member in this category will not affect the maximum number of remote attendees permitted (two, one of whom must be external as described below).
Committee Participation by Retired Members of the University of Pittsburgh Faculty

Faculty who are retired from the University of Pittsburgh are eligible to serve as members on committees formed both before and after their retirement, as long as they are still active professionally in the academic community as reasonably determined by the Chair of the Department. Retired faculty may serve in any capacity including as Chair of the committee. The participation of any committee member in this category will not affect the maximum number of remote attendees permitted (two, one of whom must be external as described below).

Remote Participation by Candidate and Committee members

The candidate and the Committee Chair must attend in person both the dissertation proposal/prospectus/overview meeting and the defense. All other committee members should also be physically present at both meetings. In exceptional circumstances, however, this requirement may be waived as described below.

External committee member only: Remote attendance may be requested from the Assistant Dean for both the dissertation proposal/prospectus/overview meeting and the defense for the external committee from a distant location if, and only if, remote attendance can be arranged according to the guidelines detailed below.

Other committee members. Remote attendance may also be requested from the Assistant Dean for no more than one of the other committee members. Where an external member from outside the University of Pittsburgh is already attending remotely, however, the request must also be accompanied by a memo from the department explaining the need for this second member to attend remotely. Such a request may not be granted by the Assistant Dean if the situation could easily be resolved by a shift in the meeting date of one month or less. A committee member who participated remotely in the overview meeting must attend the defense in person. It is the responsibility of the student to consult as early as possible with committee members about their availability such that remote attendance by more than one member is avoided if at all possible. Remote attendance by more than two committee members will not be permitted.

Remote Attendance Requirements

To satisfy the requirements of remote attendance, any remotely attending committee member must have full audiovisual interaction. The attendee must be visible to other committee members and the graduate student presenter and must be able to see the presenter as well as others in the room as necessary. The attendee must be able to hear and participate orally in all parts of the discussion and questioning. The candidate's department is responsible for arranging the necessary technology to fulfill the remote attendance requirements and it is recommended that someone with technological expertise be present to resolve difficulties if they arise. The dissertation proposal/prospectus/overview meeting or the defense of the dissertation must be rescheduled (or finished at later time) if -

1. it is not technologically possible to accomplish the required level of audiovisual interaction at the time and place appointed; or
2. the video portion of the connection fails before the defense is 50% completed (reasonably determined by the Committee Chair) and cannot be reestablished; or
3. the audio portion connection fails before 90% of the meeting or defense is completed (reasonably determined by the Committee Chair) and cannot be reestablished.

Chair Certification of Compliance with Remote Participation Requirements

The Chair of a dissertation committee in which any members participate remotely will be required to complete a form ("Remote Attendance Certification"), in which the Chair attests that the requirements for remote attendance have been met. This form must be included with the results of the dissertation proposal/prospectus/overview meeting or defense in the submission to the Graduate Office. If the Chair of the committee signs the student's paperwork in the name of the remotely attending member, a copy of the authorization for this signature (an email from the remotely attending member authorizing the signature is sufficient) must also be provided when the documentation is submitted.

The form is available at: http://www.asgraduate.pitt.edu/forms-policies

Admission to Candidacy for the PhD Degree
After completion of the overview, the student should, in consultation with the student's major advisor, file the application for admission to candidacy for the Doctor of Philosophy degree. Students are informed of admission to candidacy by written notification from the assistant dean of graduate studies. When the topic has been accepted and the proposed doctoral committee has been approved by the department chair and the assistant dean of graduate studies, the student will be informed of admission to candidacy and of the membership of the doctoral committee. Students must be enrolled in the term in which they are completing the overview for candidacy. For a listing of requirements for admission to candidacy, see Admission to Candidacy for the Doctor of Philosophy Degree.

Admission to candidacy must be at least eight months before the defense of the dissertation in order to provide an opportunity for the members of the doctoral committee to review, criticize, and monitor the proposed research.

Meetings of the doctoral candidate and the dissertation committee must occur at least annually from the time the student gains admission to doctoral candidacy. A record of such meetings must be maintained in the student's file in the department.

**Dissertation**

See Dissertation and Abstract under Regulations Pertaining to Doctoral Degrees for an overview of requirements and form for the dissertation and abstract. In addition, students in A&S should note that photocopies of journal articles may be used only in the appendix and only if necessary.

**Language of the Doctoral Dissertation**

The language in which doctoral dissertations are written shall normally be English. Exceptions may be granted for graduate students in second language departments but only for sound reasons of scholarship. Permission shall never be granted on the grounds of inadequate command of English. Students who wish to write a dissertation in a second language shall apply formally to their department chair for permission. The application must be approved by the assistant dean of graduate studies prior to submission of the paperwork for admission to candidacy. For approval, the following requirements must have been met:

1. The application must be recommended for approval by the department.
2. All members of the doctoral committee must have an adequate command of the language.
3. The student must have demonstrated full proficiency in English to the satisfaction of the assistant dean of graduate studies.

Dissertation abstracts shall in any case be in English. The final oral examination must be conducted in English.

**Final Oral Examination**

Students preparing to take their final oral examination in defense of their dissertation should refer to Final Oral Examination under Regulations Pertaining to Doctoral Degrees for details on the examination. Expansions on and additions to that information are given below.

Candidates for a doctoral degree must provide a suitable number of copies of the dissertation, as designated by their doctoral committee, for review and use during the final oral examination.

One copy of the dissertation must be submitted to each member of the doctoral committee at least two weeks before the date set for the final oral examination. All members of the doctoral committee must attend the examination; exceptions can be made only with the permission of the assistant dean of graduate studies. At least four weeks before the final examination, the chair of the doctoral committee must provide the assistant dean of graduate studies with a typewritten notice, listing the title of the dissertation and the time and place for its defense, for announcement in the University Times and Pitt Chronicle. A report of this examination and a report on approval of the dissertation, signed by all members of the doctoral committee, must be sent to the assistant dean of graduate studies for approval. The report on the approval of the dissertation may be signed concurrently with or subsequently to the report of the final oral examination. If the decision of the committee is not unanimous, the case is referred to the assistant dean of graduate studies for resolution.

When the examination is completed, the candidate must notify the assistant dean if they have uploaded an electronic dissertation and submit three copies of an abstract of the dissertation initialed by the dissertation advisor in the upper right-hand corner. These documents must have been prepared for publication in accordance with instructions furnished by A&S Graduate Studies, Student Services, 5141 Sennott Square. Each candidate must execute an agreement for the publication of the dissertation on microfilm and for publication of the abstract in Dissertation Abstracts; respond to the Survey of Earned Doctorates; and present a Microfilm Processing Fee Receipt when the dissertation is deposited in 5141 Sennott Square. All graduation requirements are in the graduation packet available each term in 5141 Sennott Square.
Multiple Degree Options

Students in A&S have several options for dual and joint degrees that may be pursued as detailed below. Students also may pursue two independent degree programs simultaneously, either in two departments within A&S or in a department within A&S and a department in another school at the University. For information on pursuing two independent degrees simultaneously, see Two Independent Degree Programs Simultaneously under Special Academic Opportunities.

Dual-Degree Programs

A&S dual-degree programs are available only in mathematics and computer science. For further details, contact one of those departments and see Cooperative-, Dual-, and Joint-Degree Programs under Special Academic Opportunities.

Joint-Degree Programs

There are three joint-degree programs involving A&S:

1. The MD/PhD program offers selected students an opportunity to earn MD and PhD degrees simultaneously from the School of Medicine and certain departments in A&S. Interested applicants should contact the MD/PhD program at M211 Scaife Hall, 412-648-2324 for further information.

2. The MBA/MA in area studies program provides students who are admitted to the MBA program in the Joseph M. Katz Graduate School of Business an opportunity to earn a joint MA in area studies with foci in Asian studies, Latin American studies, Russian and East European Studies, or West European studies. Interested students should contact the International Business Center, 355 Mervis Hall, 412-648-1509 for further information.

3. The JD/MA program offers selected students the opportunity to earn the JD and the interdisciplinary MA degree in bioethics. Interested students should see the Bioethics section of this bulletin or call the School of Law at 412-648-1415.

In both the dual- and joint-degree programs, students must be admitted to both academic programs offering the degrees and must be graduated from both degree programs at the same time. For further details, see Cooperative-, Dual-, and Joint-Degree Programs under Special Academic Opportunities.

Certificate Programs

A variety of interdisciplinary programs leading to completion of a certificate may be pursued by students working toward a master's degree or doctorate in A&S.

Composition, Literacy and Pedagogy Certificate
Composition, Literacy and Pedagogy Certificate, MA
Composition, Literacy and Pedagogy Certificate, MFA
Composition, Literacy and Pedagogy Certificate, PhD
Cultural Studies, Doctoral Certificate
Cultural Studies, Master's Certificate
Gender, Sexuality, and Women's Studies Doctoral Certificate
Gender, Sexuality, and Women's Studies Master's Certificate (Suspended)
Medieval and Renaissance Studies Doctoral Certificate
Medieval and Renaissance Studies Master's Certificate
TESOL Certificate
Department and Program Descriptions

The minimal requirements established by the Graduate Faculty of the University, as described under General Academic Regulations, and any additional requirements of A&S Graduate Studies described under A&S Degree Requirements, should be read in conjunction with specific departmental and program requirements.

Courses numbered from 1000 to 1999, inclusive, are primarily advanced undergraduate courses, but under appropriate circumstances they may be taken for graduate credit. All courses numbered 2000 and above are open only to graduate students unless special permission is granted.

Descriptions of graduate courses offered in a particular term in departments of the Dietrich School of Arts and Sciences can be obtained by visiting the following Web site: www.courses.as.pitt.edu.

Arts and Sciences Administration and Staff

http://www.asgraduate.pitt.edu/node/318

Arts and Sciences Faculty

Dietrich School of Arts and Sciences Faculty

Departments/Programs

Department of Anthropology

The Department of Anthropology offers the degrees of Master of Arts and Doctor of Philosophy.

The department also offers several areas of concentration:

- Anthropological Linguistics
- Archeology
- Cultural Anthropology
- Medical Anthropology
- Physical Anthropology

And has several focal study programs:

- Comparative Archeology of Complex Societies
- Ethnicity, Nationalism and the State

Students may combine work for the MA and PhD degrees, including a program in which the student earns an MPH (Master of Public Health in behavioral and community health science), as part of the PhD in anthropology. Students are encouraged to develop a regional specialization that can lead to a certificate in Latin American studies, Asian studies, West European studies, or Russian and Eastern European studies.

Contact Information

Department Chair: Bryan Hanks
Main Office: 3302 Wesley W. Posvar Hall
412-648-7500
Fax: 412-624-5133
E-mail: bkh5@pitt.edu
www.anthropology.pitt.edu
Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Anthropology, Graduate Administrator, 3302 WWPB, Pittsburgh, PA 15260. Phone: 412-648-7504. Fax: 412-624-5133. E-mail: pdeasy@pitt.edu.

Admissions

Entrance into programs leading to the MA and PhD degrees in anthropology requires a baccalaureate degree in one of the arts or sciences from an accredited institution of higher learning. Qualified students from any discipline are considered for admission. Applicants whose first language is English are required to submit Graduate Record Examination (GRE) scores. International applicants whose first language is not English are required to submit either the TOEFL administered by the Educational Testing Service or the IELTS administered by the University of Cambridge (taking the academic writing and reading modules). The department admits students only for the fall term. The deadline for applications is January 15. All applicants are automatically considered for financial aid.

Financial Assistance

Graduate student financial support awarded to graduate students by the Department of Anthropology includes fellowships, teaching assistantships, research assistantships, and Heinz/Mellon Fellowships in Latin American Archeology. The University Center for International Studies is another significant source of financial assistance.

Faculty

Anthropology, PhD

Requirements

Dietrich School of Arts and Sciences requirements for the PhD also apply.

Credit Requirements:

A minimum of 72 course credits in anthropology is required for the PhD (doctoral) degree. Of these, at least 57 credits must be in formal courses (as opposed to readings courses, independent study, or thesis or dissertation credits). The remaining 15 credits may be any combination of formal courses, readings courses, independent study, and/or thesis and dissertation credits.

Core Courses/Preliminary Examinations:

The core course system of the Department of Anthropology fills the role of the preliminary examination in the Dietrich School of Arts and Sciences requirements for the PhD. PhD students are required to pass (with a grade of B or better) at least three of the four core courses (cultural anthropology [ANTH 2789], physical anthropology [ANTH 2687], archeology [ANTH 2588], and linguistics [ANTH 2490]), including the core course in the student's chosen subfield of specialization. Full-time students are expected to pass the required core courses by the end of their second term in residence. A student with an MA from another institution, or with a strong undergraduate background in one or more sub-disciplines, may petition the Committee on Graduate Studies to waive the core course in that/those sub-discipline(s).

Language Requirement:

Before students are advanced to candidacy, they must demonstrate competence in a language other than English that possesses a substantial body of anthropological literature.

Method/Theory Requirements:
Students in archeology must pass with a grade of B or better ANTH 2534 and ANTH 2524 (Archeological Data Analysis 1 and 2). Students in physical anthropology must pass with a grade of B or better: 1) Biostatistics BIOST 2041 and BIOST 2042 (Introduction to Statistical Methods I and II), or, for bioarcheology concentrators with the approval of their advisor, Anthropology ANTH 2534 and Anthropology ANTH 2524 (Archeological Data Analysis I and II); and 2) by the end of the second year, Anthropology ANTH 2614 (History of Paleoanthropology).

Students in cultural anthropology must pass with a grade of B or better ANTH 2763 (Field Methods) and ANTH 2750 (Seminar on Contemporary Theory) or a comparable seminar approved for this purpose by the Committee on Graduate Studies. Students may petition for approval of other courses to satisfy these requirements.

Comprehensive Examinations:

Students must pass two comprehensive examinations designed to test breadth and depth of knowledge in the chosen areas of expertise. The acceptable forms of the exam are described in greater detail on the department's Web site. Each examination is designed and administered by a faculty committee consisting of at least three members of the department. Students generally take their comprehensive examinations at the end of their third year in the program.

Dissertation Overview:

Before actively pursuing dissertation research, the student makes an oral presentation of the intended project to a dissertation committee chosen by the student subject to approval by the department chair and dean. Following committee approval, the student applies for admission to candidacy for the Doctor of Philosophy degree.

Dissertation Defense and Graduation:

The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and is open to the University community.

Anthropology, PhD/MPH

Requirements

MPH students enrolled in the MPH/PhD program in anthropology fulfill the course work requirements for both BCHS and anthropology and earn both degrees for a total of 87 credits. The MPH essay/thesis requirement is met by the PhD dissertation. The practicum requirement is met through fieldwork.

Anthropology, MA

Requirements

A minimum of 30 course credits in anthropology and a paper is required for the MA (master's) degree. Of these, at least 21 credits must be in formal courses (as opposed to readings courses, independent study, or thesis credits). Full-time MA students must pass the core course in their declared subfield by the end of their second term in residence (or, for part-time students, before they have completed 18 credits), or petition for a specialized written examination (administered by their MA committee) in lieu of the core course. The MA committee consists of three graduate faculty members. Two must come from the department and include the student's advisor. The third member can be either from the department or outside of the department. All committees are approved by the faculty of anthropology. The language requirement is the same as for the PhD program. Students must pass a designated "methods" course with a B or better.

For the MA paper, students plan an original research paper with their advisory committee. This committee will also evaluate the final paper. Note that the required paper is not necessarily a "thesis" as defined in Dietrich School of Arts and Sciences requirements (although a thesis, as formally defined, would also satisfy the MA paper requirement).
Center for Bioethics and Health Law

The Center for Bioethics & Health Law provides interdisciplinary graduate education leading to the Master of Arts in Bioethics, which is designed for those wanting to incorporate attention to bioethical issues into their academic or professional careers or into their research in the humanities or the health or social sciences. Joint JD/MA and MD/MA programs with the Schools of Law and Medicine permit students to earn the MA along with their professional degrees in less time than would be required to pursue the degrees separately. Faculty of the Center pursue empirical and scholarly research on a range of ethical issues in clinical care, public health, and research. The Center provides extra-curricular educational programming in bioethics and medical humanities throughout the University and continuing education across the region. Its programs are described at http://bioethics.pitt.edu.

Contact Information

Program Director: Lisa S. Parker, PhD
Program Administrator: Beth Ann Pischke
Main Office: 519 Barco Law Building
412-648-7007
Fax: 412-648-2649
bioethics@pitt.edu

Admissions

Applicants for admission must submit digital scans of all undergraduate and graduate transcripts (official transcripts are not required during the application process - applicants who are accepted will be required to submit certified transcripts when they accept the offer of admission and matriculate), three letters of recommendation, a personal statement explaining interest in the program (including plans to use this degree in further professional or graduate education or a career), a sample of written work, and Graduate Record Examination scores (or an applicable substitute for those applying to joint degree programs, e.g., MCAT or LSAT scores). If submitting GRE scores, use the University Code 2927 and the Department Code for Interdisciplinary Programs 5101. International applicants whose first language is not English are required to submit TOEFL scores. Applications for admission to the Bioethics Program in the fall term must be submitted no later than March 31; after that date, interested applicants should contact the program administrator. Joint program students must be admitted by both the Dietrich School and the relevant professional school.

Financial Assistance

Applicants may qualify to receive a Dean's Tuition Scholarship to defray part of the cost of tuition and fees. Applicants may apply for student loans.

Faculty

Faculty of the Center for Bioethics & Health Law, and its affiliated faculty, teach in the MA Program in Bioethics, serve on thesis committees, and provide clinical and research mentorship. These faculty are listed on the Center's website at http://bioethics.pitt.edu/people. They conduct research-empirical and theoretical-on issues across the lifespan, professional issues like conscientious objection, and issues in research including mental health and genomic research. Research by Center faculty is described at http://bioethics.pitt.edu/research.

Dietrich School of Arts and Sciences Faculty

Master of Arts in Bioethics

This interdisciplinary MA program allows students to explore ethical issues in healthcare, public health, and health-related research. Students tailor their course of study to their particular interests and take electives at the intersection of bioethics and cultural and gender studies, history, law, philosophy, public health, religious studies, and the social sciences. Designed for students with background in the humanities or the health or social sciences, as well as clinicians and lawyers, the program emphasizes the philosophical foundation of bioethics and healthcare, and offers opportunities
for clinical experience and in-depth research. Students may complete coursework, including clinical practica, in one calendar year. Joint JD/MA and MD/MA programs are available.

Requirements

The program requires three core courses—BIOETH 2664 - BIOETHICS, BIOETH 2661 - THEORETICAL FOUNDATIONS, and BIOETH 2658 - PHILOSOPHY OF MEDICINE—and two clinical practica in which students observe and analyze ethical concerns arising in clinical settings. For the balance of the program, students tailor their course of study through selection of electives and development of their Master's thesis project, which enables them to pursue their own research while working closely with a faculty advisor and committee members. Students must earn 30 hours of credit with a B average or better. For additional information, consult http://bioethics.pitt.edu/academic-programs.

Department of Biological Sciences

Graduate education in the biological sciences provides individuals with the training, guidance, experience, and opportunity to participate in research that enables their transition from being students of biological knowledge to being fully participating members of their profession. The Department of Biological Sciences offers the degree of Doctor of Philosophy via two areas of concentration:

Molecular, Cellular and Developmental Biology (MCDB)
Ecology and Evolution (E&E)

Contact Information

Department Chair: Jeffrey G. Lawrence, PhD
Main Office: A234 Langley Hall
412-624-4350
Fax: 412-624-4349
E-mail: biophd@pitt.edu
http://www.biology.pitt.edu/

Additional information concerning the department's graduate programs may be obtained from the University of Pittsburgh, Department of Biological Sciences, Graduate Administrator, A234 Langley Hall, Pittsburgh, PA 15260. Phone: 412-624-4268. Fax: 412-624-4349. E-mail: biophd@pitt.edu.

Admissions

Admissions to our graduate programs are competitive, and applications must meet minimum standards (http://www.biology.pitt.edu/graduate/how-apply). Applications should be submitted via online at http://app.applyyourself.com/?id=up-as. Applications are considered for matriculation for the fall term beginning July 1, and must be completed by December 9 for applicants residing within the United States and December 8 for international applicants.

Financial Assistance

Graduate students receive a competitive stipend, health insurance, tuition waivers, and other financial assistance.

Faculty

http://www.biology.pitt.edu/all-faculty

Biological Sciences, PhD
Requirements

http://www.biology.pitt.edu/graduate

A PhD in biological sciences involves four or more years of study and requires the completion of 72 credits. Specific requirements are as follow:

- Graduate Courses. Students in both the MCDB and EE programs are required to take 4 graduate-level courses within the first two years.
- Seminar Courses. MCDB students take two semesters of Biological Sciences Seminar (BIOSC 2450) in the first year. EE students take two semesters of Seminar in Ecology (BIOSC 2540) in the first two years.
- Communications workshops. Students must complete three 1-credit Communication in the Biological Sciences workshops, one each in Grants, Papers, and Seminars.
- Research Rotations. Both MCDB and EE students perform research rotations in the first year in at least two (EE) or three (MCDB) different labs.
- Research Ethics. Students must complete a workshop in the ethical performance of scientific research in the first year.
- Seminars. MCDB and EE students must attend the weekly MCDB Student Research Seminar (BIOSC 2050) and EE Student Research Seminar (BIOSC 2050), respectively. After the first year, students must present their research at these seminars once per year. Students must also attend the weekly Departmental Seminar presented by outside scholars.
- Preliminary Review. Advancement to the second year of study requires successful completion of courses with an overall average of B or better, satisfactory performance in research rotations and the identification of a research mentor.
- Dissertation Research. MCDB students choose a dissertation advisor by the end of the second semester. Typically, students in the E&E program identify a research advisor prior to entry. Each student also has a Dissertation Committee made up of three other members of Department and an outside member and must meet with this committee at least once a year. Students are expected to establish their dissertation research topic during the second year.
- Comprehensive Exam. Taken in the second year, this is designed to test a student's general knowledge of MCDB or EE and their detailed knowledge of one particular area.
- Teaching. Each student must act as a Teaching Assistant for one semester. Students may teach more than this in particular if they take part in the Teaching Minor Program.
- Admission to Candidacy for the PhD Degree. This is based upon research performance and satisfactory completion of the comprehensive exam. Admission to candidacy is decided at a special overview meeting of the Dissertation Committee.
- PhD Defense. The PhD is awarded following successful defense of the dissertation with a public seminar and satisfaction of all other University, department, and program requirements.

Department of Chemistry

The Department of Chemistry provides programs of graduate study leading to the MS and the PhD in chemistry in the fields of analytical, biological, inorganic, organic, material, organic, physical chemistry, and chemical physics. Interdisciplinary research is also currently conducted in the areas of surface science, combinatorial chemistry, natural products synthesis, nanotechnology, biosensors, laser spectroscopy, organometallic chemistry, and theoretical chemistry.

Research

Analytical Chemistry
Biological Chemistry
Inorganic Chemistry
Organic Chemistry
Physical Chemistry

Contact Information
Department Chair: Sunil Saxena
Main Office: 234 Chevron Science Center
412-624-8200
Fax: 412-624-8611
E-mail: gradadm@pitt.edu
www.chem.pitt.edu

Facilities-Department Shared Instrumentation

The Department of Chemistry is housed in a modern chemistry complex that includes Eberly Hall, Chevron Annex, Ashe Lecture Halls and the 15-story Chevron Science Center. The Chemistry Instrumentation Center is an in-house research instrumentation laboratory that includes NMR, mass spectroscopy, and X-ray crystallography facilities. In addition to instrumentation within individual research groups, the department supports a vast array of modern research instruments, including three 300 MHz NMRs, one 500 MHz NMR, one 600 MHz NMR, two high-resolution and two low-resolution mass spectrometers, a light-scattering instrument, a circular dichroism spectrophotometer, a spectropolarimeter, X-ray systems-single crystal, powder, and fluorescence, a scanning electron microscope, an atomic force microscope, a vibrating sample magnetometer, several FT-IR and UV-VIS spectrophotometers, and workstation computer clusters. The Chemistry Library, a unit of the University Library System is a 6,000-square-foot facility that provides access to more than 30,000 monographs, 15,000 bound periodicals and more than 250 maintained journal subscriptions. Additional shared research resources include in-house machine shop, electronics shop, and glassblowing laboratory; helium recovery system and the Dietrich School Scientific Stockroom.

Admissions

A bachelor's degree in chemistry, or closely related discipline, including courses in mathematics through integral calculus, is preferred. In addition, the student must meet the general Dietrich School of Arts and Sciences requirements for admission to graduate study.

Entering students take appraisal exams in each of four areas of chemistry: analytical, inorganic, organic and physical. In discussion with a member of the department's Graduate Student Advisement Committee, scores on the appraisal exams are considered, as each student selects and registers for appropriate coursework. Satisfactory performance in four core courses is required for students to pass the preliminary examination. Midway through the first year in residence, students are assigned to research groups. The remainder of the student's graduate program is developed in consultation with their research advisor. All advanced degree programs require original research and course work. Additional requirements include a comprehensive examination, thesis/dissertation and defense, seminar, and, for the PhD candidate, a research proposal. To earn a PhD, this process typically takes four to five years.

All applicants must submit Graduate Record Examination (GRE) scores. Submission of advanced chemistry GRE test scores is recommended. International applicants must also submit TOEFL or IELTS scores. The minimum acceptable TOEFL score for the Department of Chemistry is 100 with a minimum of 22 in each category. The minimum IELTS score for the Department of Chemistry is a 7.0 with a minimum of 6.5 in each section.

Financial Assistance

All full-time doctoral students in good academic standing receive complete financial support in the form of teaching assistantships, research assistantships or competitive departmental or university fellowships. This support is available throughout a student's graduate career, including summer sessions. High quality UPMC health care coverage is provided with all assistantships and fellowships.

Faculty

http://www.chem.pitt.edu/people/faculty

Chemistry, PhD

Requirements for the PhD
PhD candidates are required to earn 72 graduate credits that include 12 credits of core courses (CHEM 2110, CHEM 2120, CHEM 2210, CHEM 2220, CHEM 2230, CHEM 2310, CHEM 2320, CHEM 2430, CHEM 2440, CHEM 2810, CHEM 2820). In consultation with their research advisor or GSAC, students may take additional courses after they complete the required core selections. Candidates are required to participate in teaching activities, for at least one or two terms, during their doctoral program.

Additional Requirements

**PhD Preliminary Evaluation:** Satisfactory completion of the preliminary exam requires the student to achieve a grade point average of at least 3.00 in 12 credits of core courses selected from two or three of the five chemistry divisions. If the student receives grades below B in two or more core courses, regardless of the overall GPA, that student will have failed the Ph.D. preliminary evaluation and will not be permitted to remain in the Ph.D. program.

**Comprehensive Examination:** The comprehensive examination provides the candidate an opportunity to demonstrate their potential for independent research and scholarship. The student submits a research report on their own work to committee members; the oral exam is a discussion of the student's research to date. The student must be prepared to answer questions related to the theoretical and practical aspects of the research problem. The student is also expected to show a command of graduate course work related to the field of the student's research. The department's comprehensive examination satisfies the Dietrich School of Arts and Sciences requirements for an overview examination. Upon satisfactory completion of the Comprehensive Exam, with approval by the department chair and the assistant dean of graduate studies, the student is formally admitted to candidacy for the PhD program.

**Seminar:** Each student in the doctoral program is required to present at least one seminar, open to the department. The seminar may be given at any time during the student's career and on any topic approved by the student's major advisor, including the results of doctoral research.

**Proposal:** When substantial progress has been made by the student on the dissertation problem a proposal for an original research problem is to be written, presented and successfully defended before the student's faculty proposal committee. The topic of this proposal should differ from that of the student's dissertation problem. The proposal is an important opportunity for the student to display scientific maturity in terms of originality and critical thinking.

**Dissertation and Final Examination:** The PhD dissertation is a report of scientific investigation completed under the supervision of the student's faculty mentor/research advisor. It must represent an original contribution to knowledge and must relate what is found to what was known before. The candidate must defend his/her dissertation in an oral examination before a doctoral committee consisting of the major advisor, at least two additional departmental graduate faculty members, and one graduate faculty member from another department within the University. With prior approval, a qualified faculty member from another institution may also be appointed. The final examination is open to all members of the University community.

**Chemistry, MS**

Requirements for the Master's Degree

Four to six terms of full-time graduate work is generally required to obtain a MS degree in chemistry (a minimum of 30 credits). Special arrangements can be made for individuals who wish to pursue a MS degree as part time students. Each MS student must take a minimum of 12 credits of 2000- or 3000-level chemistry courses. These must include 2 three-credit core courses (CHEM 2110, CHEM 2120, CHEM 2210, CHEM 2220, CHEM 2230, CHEM 2310, CHEM 2320, CHEM 2430, CHEM 2440, CHEM 2810, CHEM 2820); the remaining courses can either be in the student's area of specialization or in other chemistry division areas. Students electing to present a nonresearch thesis must take one laboratory course (CHEM 1250, 1430, 1440, or 1600) for credit, in addition to the preceding requirements. Each student must also demonstrate proficiency in physical chemistry by achieving 65% or higher score on physical chemistry appraisal exam, or earn a grade of B or better in CHEM 1410 and 1420 (or equivalent) or earn a B or better grade in either CHEM 2430 or CHEM 2440.

Additional Requirements

**Comprehensive Examination:** The student must earn a B or higher in all required chemistry courses and must maintain an overall QPA of 3.0 or higher to be in good standing. The comprehensive examination consists of an examination of the student's record in the required core courses and the additional 2000- or 3000-level courses.
Thesis: The thesis for the MS must represent an original research project or a comprehensive and detailed survey of a research topic of current interest in chemistry. It must be defended in an oral examination.

Department of Classics

The Department of Classics focuses on the interpretation of the culture and society of Greco-Roman antiquity in the widest sense of those terms. Our Doctor of Philosophy is integrated into the Joint Graduate Program in Classics, Philosophy and Ancient Science, http://cpas.pitt.edu/. The program is primarily designed to train professional scholars and teachers of the Classics with a specialization in ancient philosophy, and/or ancient science. Students receive intensive training in methodologies appropriate to their special areas of concentration, reading and analysis of Greek and Roman texts, and in the secondary literature. While the students' primary association is with the Department of Classics, they will work closely with graduate students and faculty drawn from the Departments of Philosophy and the History and Philosophy of Science.

Contact Information

University of Pittsburgh, Department of Classics
1501 Cathedral of Learning
4200 Fifth Avenue, Pittsburgh, PA 15260

[P] 412-624-4494
[F] 412-624-4419

Director of Graduate Studies:

Director of Graduate Studies and Director of the Joint Graduate Program in Classics, Philosophy and Ancient Science (CPAS):

Christina Hoenig, Assistant Professor in Classics, Department of Classics, University of Pittsburgh

Office: 1502A Cathedral of Learning
Phone: 412-624-4485
Email: emh159@pitt.edu

Admissions

Applicants must hold a Master of Arts (MA), or an equivalent qualification, in Classics or Classical Studies upon admission to the degree program, and be prepared to transfer at least 24 credits of relevant coursework. Transfer credit will not be accepted for courses in which a grade lower than B or its equivalent has been received (For more information on transfer credits, please see the Graduate and Professional Bulletin at http://www.bulletins.pitt.edu/graduate/regulations.htm.

Applicants should have a broad exposure to the cultural history of ancient Greece and Rome, and will have demonstrated knowledge of Ancient Greek and Latin appropriate for graduate work. All applicants will also have demonstrated reading knowledge of at least one modern foreign research language besides English (German, French, or Italian) before beginning the program. Applicants from outside the U.S. must show evidence of having completed a program of study equivalent to a Master of Arts degree and be prepared to present certification of the degree or license at the time of registration. If the credentials are incomplete or not familiar, please send a copy of the application to Office of International Services for evaluation. For applicants whose first language is not English, please refer to http://www.asgraduate.pitt.edu/node/315 to ensure fulfillment of the University's language requirements.

Required Application Materials:
- University of Pittsburgh's on-line Application for Admission (note the $50.00 application fee)
- A personal statement indicating your reasons for pursuing a graduate degree at the University of Pittsburgh and your academic and professional goals. You may submit your Statement of Purpose and writing sample in the "Additional Information" section of the online Application for Admission, which allows you to upload your document. Alternatively, you can mail it to the Department of Classics.
- Official or Unofficial College Transcripts. Admitted students will need to send official transcript copies before they can be matriculated.
- Current, official GRE scores
- 3 Letters of Recommendation. You must submit the names of three referees with your online Application for Admission. The recommendation form to be included with each letter of recommendation is available for download as a .pdf file once you begin your online application process. Referees may submit their recommendations either electronically or by mail directly to the Department of Classics.
- 2 samples of academic writing.
- Non-US citizens: TOEFL or IELTS scores. This process must be completed by January 15.

**Financial Assistance**

The Department of Classics expects to admit one graduate student every other year. Students admitted to the program receive a teaching fellowship during years 1-4. During the first year of teaching at the University of Pittsburgh, students receive a teaching assistants hip (TA). If a student's teaching is deemed satisfactory by the graduate faculty based on OMETS and teaching observations, he or she will receive a teaching fellowship (TF) during their remaining years teaching in the department. The expected time to degree in the Department of Classics is 4 years. If additional time is required to complete the degree, students are expected to apply for dissertation funding (both internally and externally). Assistantships include full tuition remission, health benefits at no additional cost, and a stipend. For information on current stipend rates, see http://www.pitt.edu/~graduate/stipends.html. See listing of available fellowships for all graduate students at the Dietrich School of Arts and Sciences http://www.asgraduate.pitt.edu/financial-assistance.

**Faculty**

Dietrich School of Arts and Sciences Faculty

**Classics, PhD**

**Overview of Degree Program**

The Doctor of Philosophy in Classics is integrated into the Joint Graduate Program in Classics, Philosophy and Ancient Science,

http://cpas.pitt.edu/

The program is primarily designed to train professional scholars and teachers of the Classics with a specialization in ancient philosophy, and/ or ancient science. The students' primary association is with the Department of Classics. At the same time, they will work closely with graduate students and faculty drawn from the Departments of Philosophy and the History and Philosophy of Science. The rigorous curriculum is comprised of inter-departamental seminars offered by the graduate faculty from the three participating departments, and complemented by a range of seminars from across the University's thriving intellectual departments and communities. The Ph.D. program mentors students' professionalization by actively supporting publication, conference participation, and membership in professional organizations. It prepares students to participate in and contribute to scholarly conversations nationally and internationally. All Ph.D. students instruct a variety of undergraduate courses under mentorship of the faculty, which include Greek and Latin language classes, Greek and Roman civilization and history. Graduates of the program are well-qualified and competitive candidates for academic positions at a variety of institutions, post-doctoral research opportunities, and non-academic employment sectors

**Requirements for the PhD**

**Degree Requirements**

**Course Requirements:**
Students are required to enroll in the following courses:

- CPAS Proseminar (two terms, during year 1 in the program)
- CPAS Ancient Greek Seminar (four terms, during years 1 and 2 in the program)
- Four courses in Classics, one of which may be completed at the undergraduate level with appropriate graduate components added (e.g. papers and oral examinations, as approved by the DGS). These four must include:
  - at least two Classics graduate seminars in Ancient Science (2000-level)
  - at least two other graduate seminars in Classics or a related subfield (e.g. ancient Greek or Roman literature, history, archaeology, rhetoric, art history) approved by the student's advisor and the DGS.
- Two courses in Philosophy, including Metaphysics and Epistemology.
- One course in History and Philosophy of Science: Part One of the 'History of Science Sequence' (equals one course).
- Remaining credits may be earned through electives, Independent or Directed Study, and up to 12 credits of PhD dissertation research.

**Comprehensive PhD Examinations**

Students are required to demonstrate expertise in both Greek and Latin by passing a translation exam by the beginning of the Fall Term of their second year. As a preparation, students are required to carry out independent work on the departmental reading lists in both Latin and Ancient Greek authors (as specified on the departmental lists and in discussion with the student's advisor). This translation exam will represent the Doctoral Preliminary Examination. Students may petition to retake the exam subject to consensus of the Dissertation Committee (see the section 'The Dissertation Committee', below, p.8).

Before admission to Ph.D. candidacy, students must pass three Comprehensive ("Qualifying") Examinations by the beginning of their third year in the program:

1. Greek and Roman History
2. Greek and Latin Literature
3. Special Topic: either Classical Philosophy or Ancient Science

Students are required to demonstrate expertise in a second modern research language by passing a departmental exam by the beginning of their second year (one modern language qualification must have been obtained upon entry into the graduate program, see the section Admissions Requirements). This second modern research language must be German unless prior qualification in German has already been obtained before entry into the doctoral degree program. The modern foreign language requirement may also be satisfied by earning a 'B' or better in an appropriate reading course offered by the Departments of German and/or French and Italian Languages and Literature.

**The Prospectus**

The prospectus proposes the subject and plan for the completion of the dissertation. It must include the following items:

- Abstract (ca. 200 words). The abstract gives a clear statement of the research topic and the main conclusion(s).
- Proposal (ca. 3000-4000 words).
  1. statement of the research topic, with review of earlier scholarship on the topic. Make clear to the reader how your work fits into the scholarly discussion of the topic. A precise mapping of your own position relative to the views of other scholars will make it easier for you to focus your attention on your own project and to define your contribution to the scholarship.
  2. description of the method(s) you will use in conducting your research. This item is related to the review of scholarship. In the course of the review you may single out the approach of a scholar or scholars that you have decided to follow in your own research; or you may reject previous approaches in favor of your own. Here you may include a specific example or examples of what kinds of evidence you will be using and how you will treat that evidence. A sample of the argumentation you will be using allows readers to see whether your method is adequate to the material you are working with.
  3. statement of the contribution that the dissertation will make to scholarship on the topic. Here you will explain how your work marks an advance in some way on what previous scholars have written.
  4. bibliography (not a comprehensive listing at this stage of all relevant items but rather of the works that at this point have stimulated and influenced your own thinking on the topic).
- A Chapter Outline with a brief summary of contents for each one.
- A Timetable for Completion, setting out a realistic schedule for completing the project.
For the submission of the prospectus, the student must file the Prospectus Form with the Graduate Administrator. A prospectus meeting is then held to discuss the student's completed prospectus. At that meeting the prospectus must be approved by the three members of the Classics faculty plus a member from outside the department (usually drawn from within the university but may, with special permission, be chosen from outside the university). These four members, all of whom must have graduate faculty status, will constitute the student's Dissertation Committee (see the section 'The Dissertation Committee' below, p.8). All these committee members must be present for the prospectus meeting and later for the dissertation defense.

The Dissertation

This written work must demonstrate the student's capacity to carry out independent and original research in the field of Classics, ancient philosophy and/ or ancient science. It must embody an extended original investigation of a problem of significance to these fields, and is the capstone to the research program of a student's education. A specific description of the requirements, and of the final oral examination, which completes the requirements for the PhD, can be found in the Faculty of Arts and Sciences Bulletin http://www.bulletins.pitt.edu/graduate/index.html.

Dissertation Defense

When the student completes the dissertation and the supervisor believes it is ready to be defended, a dissertation defense is scheduled and the date of the defense must be published in advance in the University Times (see the Graduate Administrator about this; also note that the date of the defense must be set at least one month in advance so that it can be published on time). The student must submit to the full Dissertation Committee a complete, polished, copy-edited text with full scholarly apparatus and images. This must be submitted by November 1 at the latest to schedule a defense in the fall semester, or by March 1 at the latest to schedule a defense in the spring semester. There are no defenses in the summer semester. The defense is normally a two-hour conversation with the Dissertation Committee; all four members must be physically present. The defense is open to the public and may thus be attended by other students in the department as well as by family or friends of the student.

Students must submit an application to graduate in the term in which they plan to defend and must be enrolled for at least one credit or for Research and Dissertation for the Ph.D. Degree (CLASS 3000). The university now requires all dissertations to be filed electronically. Complete instructions can be found at http://www.pitt.edu/~graduate/etd/. Students should have their committee members sign the Electronic Theses and Dissertations Approval Form http://www.pitt.edu/~graduate/etd/pdf/ETD_Approval_Form.pdf at the defense.

Note: The defense must be passed no later than seven calendar years after the passage of the comprehensive exams. If a student does not pass their defense in this time limit, they must re-take the comprehensive exams in a format approved by the Dean's Office.

Summary of Milestones towards the PhD Degree

1. Modern Language Exam by beginning of Year Two
2. PhD Preliminary Examination by Beginning of Year Two
3. Three Comprehensive Exams (oral and written) by beginning of Year Three
4. Dissertation Prospectus by end of Year Three Fall Term
5. Admission to PhD candidacy at least 8 months prior to defense
   • # of courses required (list core courses, etc.)
   • PhD Prelim Evaluation
   • Comprehensive Exam
   • Proposal/overview
   • Dissertation and Final Examination

Classics, MA
The Classics Department is currently not accepting applications for the Masters Program.

Requirements for the MA

The course requirements for the MA are a minimum of ten one-term graduate credit courses (30 credits), of which at least four must be at the 2000 level or higher. Included in the program must be CLASS 2010 (Introduction to Classical Studies) and a two-term sequence, consisting of a reading course and a seminar on a single subject. Students may emphasize either Greek or Latin, but they must pass at least one course at the level of 1300 or higher in each language.

A reading knowledge of German is required. This requirement may be met either by taking two appropriate courses and receiving a letter grade of B or higher, or by passing an examination administered by the department.

The MA comprehensive examination consisting of three parts is also required. Students choose, in consultation with the graduate advisor and the department, the three fields in which they will be examined. The three are usually chosen from the following six fields: Greek translation, Latin translation, Greek literature, Latin literature, Greek history, and Roman history. Either Greek translation or Latin translation must be included.

Department of Communication

The department offers the Master of Arts and Doctor of Philosophy in Rhetoric and Communication. Areas of emphasis: history, theory, and criticism of rhetoric; public address and argument; media and cultural studies; and rhetoric of science. Many students conduct work in two or more of these areas. The curriculum emphasizes theoretical, philosophical, critical, cultural, and historical approaches to communication.

Contact Information

Director of Graduate Studies: Dr. Brent Malin
Main Office: 1433 Cathedral of Learning
412-624-6569
Fax: 412-624-1878
E-mail: bmalin@pitt.edu
http://www.comm.pitt.edu/

Additional information concerning the department's graduate program may be obtained by contacting commgrad@pitt.edu or writing to University of Pittsburgh, Department of Communication, Graduate Admissions, 1433 Cathedral of Learning, Pittsburgh, PA 15260.

Admissions

Admission is highly selective, and limited to those who can be funded. The program's focus is on the PhD, and admission for the MA program will be limited to those deemed likely to complete the PhD. In order to be considered for admission to graduate standing, students must meet the requirements of the Dietrich School of Arts and Sciences and supply (by the first business day of the year) all materials called for in the department's application guidelines, including a completed application form, copies of all post-secondary educational records, Graduate Record Examination scores sent directly from the Educational Testing Service, at least three letters of recommendation, a statement of purpose, and writing sample. Non-native speakers of English without a degree from an accredited institution of higher education in the U.S. must also have the Educational Testing Service send TOEFL scores as part of the application. Citizens of other nations follow a separate set of guidelines that include TOEFL requirements and certified/notarized translations of transcripts and diplomas for applicants from countries where English is not the official language. Upon admission, candidates will be assigned an advisor who will assist them in planning a course of study.

Financial Assistance

The department makes every effort to sustain funding and full remission of tuition for five years of doctoral study for students entering directly from undergraduate programs, and four years for students entering with an M.A. or equivalent in Communication or cognate field. In addition to teaching assistantships there are also several non-teaching fellowships, including some dedicated to underrepresented groups, available through the University.
See listing of available fellowships for all graduate students at the Dietrich School of Arts and Sciences http://www.asgraduate.pitt.edu/financial-assistance

William Pitt Debating Union

Graduate students interested in public argument and argumentation theory can pursue co-curricular study and teaching of argumentation practices by working with the William Pitt Debating Union (WPDU), one of the nation’s most venerable debating societies.

Faculty

Dietrich School of Arts and Sciences Faculty

Communication: Rhetoric and Communication, PhD

The aim of the program is to train rigorous researchers and excellent teachers. To this end it offers historical, theoretical, and critical approaches to the study of communication. The curriculum includes traditional and innovative course work drawn from four intersecting areas of emphasis: History, Theory and Criticism of Rhetoric; Media and Cultural Studies; Public Address and Argument; and Rhetoric of Science.

Requirements for the PhD

Complete plan of study within the first year of post-MA enrollment or by the end of the term when MA comps are completed

- choose a faculty adviser
- select a faculty committee in consultation with the adviser
- meet with committee to discuss and/or revise the plan of study
Obtain committee signatures for approval by Director of Graduate Studies (DGS).

Complete 72 course credits, including credits toward MA (up to 24 hours transfer credit)

- Six hours from departmental core requirements, COMMRC 2296 - PROSEMINAR and COMMRC 3384 - TEACHING PRACTICUM
- With compelling reasons and approval from DGS, up to nine of required course credits can be taken outside of the department and count towards required credit.

Must maintain satisfactory progress of completing 18 credit hours a year

Successfully complete PhD Comprehensive exams, during or in the term immediately following term in which course work is completed.

- Written exam followed about 2 weeks later by oral defense, scheduled with committee
- Prepare a dissertation prospectus for approval by adviser and dissertation committee
- Form dissertation committee, requiring 3 departmental faculty and 1 outside member
- Submit prospectus for oral defense
- Secure committee’s approval of prospectus
Complete and successfully defend a dissertation

- Oral defense of dissertation as a culminating event in the student’s graduate program

Final submission must conform to Electronic Thesis And Dissertation (ETD) guidelines.

For any questions contact your advisor, DGS, or Graduate Administrator

Communication: Rhetoric and Communication, MA
The aim of the program is to train rigorous researchers and excellent teachers. To this end it offers historical, theoretical, and critical approaches to the study of communication. The curriculum includes traditional and innovative course work drawn from four intersecting areas of emphasis: History, Theory and Criticism of Rhetoric; Media and Cultural Studies; Public Address and Argument; and Rhetoric of Science.

Requirements for the MA

Complete plan of study within the first year of enrollment

- Choose a faculty adviser
- Select a faculty committee in consultation with the adviser
- Meet with committee to discuss and/or revise the plan of study
- Obtain committee signatures for approval by Director of Graduate Studies (DGS)

Complete 30 course credits (normally, 10 courses)

- This includes six hours from departmental core requirements, COMMRC 2296 - PROSEMINAR and COMMRC 3384 - TEACHING PRACTICUM Teaching Practicum With compelling reasons and approval from DGS, up to six of required course credits can be taken outside of the department and count towards required credit.
- Maintain satisfactory progress of completing 18 credit hours a year

Complete MA Comprehensive exams successfully

Prior to defense, submit two revised seminar papers, to be approved by committee to be recommended to move into PhD Program

Written exam followed about 2 weeks later by oral defense, scheduled with committee.

Program in Computational Biology

Joint Pitt-CMU PhD Program in Computational Biology

James Faeder and Russell Schwartz, Directors

Computational biology is defined as the development and application of data-analytical and theoretical methods, mathematical modeling, and computational simulation techniques to the study of biological, behavioral, and social systems.* It is an interdisciplinary approach that draws from specific disciplines such as mathematics, physics, computer science and engineering, biology, and behavior science.

The Joint CMU-Pitt PhD Program in Computational Biology is an intensive, interdisciplinary training program that provides students with a deep understanding of the current state of the art in computational biology. Students in this program acquire the quantitative background and research skills needed to advance the field of computational biology. In addition, they develop the critical thinking skills needed to appreciate the potential, strength, and limitations of computational, mathematical, and engineering tools for tackling biological problems.

*NIH Working Definition, July 17, 2000

Contact Information

<table>
<thead>
<tr>
<th>Directors:</th>
<th>University of Pittsburgh:</th>
<th>Carnegie Mellon University:</th>
</tr>
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<tbody>
<tr>
<td>James R. Faeder, PhD Associate Professor Department of Computational and Systems Biology School of Medicine,</td>
<td>Russell Schwartz, PhD Professor of Biological Sciences, and Computer Science Carnegie Mellon University 654B Mellon Institute, 4400 Fifth Ave.</td>
<td></td>
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Admissions

The interdisciplinary character of the program is unique and distinct from many other programs that are focused toward a specific discipline. The program seeks outstanding students from the biological, physical and computational sciences, and engineering. For example, computational biology majors, or double majors in biology and quantitative sciences, are ideal candidates.

Recommended Prerequisites
For students planning their undergraduate course schedules in anticipation of applying for the PhD in computational biology, prerequisites in life sciences, computer science, physical sciences, mathematics, statistics, and computational biology are recommended. Students whose background does not include these courses may be admitted with the additional requirement to take appropriate compensating classes. For more information on prerequisites, see http://www.compbio.cmu.edu/?page_id=91

Application

REQUIRED MATERIALS - Deadline December 15, 2017

1. The Online Application
2. Statement of Purpose
3. Three letters of Recommendation
4. Unofficial Transcripts (submitted online)
5. Conversion of GPA (for international students only)
6. Unofficial GRE Scores (submitted online)
7. Unofficial TOEFL Scores (submitted online)
8. Application Fee

Applications are reviewed by the Joint CMU-Pitt PhD Program in Computational Biology. Each admitted student is assigned an initial university of matriculation, and receives an admissions offer letter from that university. Incoming students can be placed directly in a laboratory (if mutual interest exists between a student and an advisor), or go through a period of three rotations, after which the student chooses an advisor. Students have the ability to change advisors (subject to agreement of the new advisor and availability of support) and to transfer between the two universities to reflect advisor changes.

For more information on application process, see http://www.compbio.cmu.edu/?page_id=163

Financial Aid

All students are provided with a stipend and full tuition remission. Assistance is also provided for health insurance.

Teaching Assistantships

Although all students are supported as research assistants throughout their time in the program, there are opportunities to assist in the teaching courses of the program. Students are also encouraged to develop teaching skills by mentoring other students and passing on their knowledge to lab mates and fellow students.

Terminal Masters Degree

The program does not admit students whose goal is to attain a Master's of Science degree. However, it might become necessary for a PhD student to transfer to an MS track for academic reasons or reasons beyond the student's control, e.g., medical circumstances or a change in family circumstances necessitating a long-distance move.

Courses

http://www.compbio.cmu.edu/?page_id=87

Training Faculty

The program provides students with cross-disciplinary training in established as well as newly emerging fields of computational biology. Students have access to a community of faculty mentors from the University of Pittsburgh and Carnegie Mellon University, which not only provides a breadth of research areas for investigation, but also offers the technical and intellectual resources to make rapid progress toward their doctoral degree.
Center for Neuroscience Training Program (CNUP), PhD

PhD Degree Requirements

Credits: A minimum of 72 credit hours including a 23-credit course requirement covering fundamental material in cellular and molecular neurobiology, systems neurobiology and several elective courses.

Specifically, the following core courses are required:

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- MSNBIO 2010 - SCIENTIFIC ETHICS or NROSCI 2010 - SCIENTIFIC ETHICS
- MSNBIO 2100 - CELLULAR AND MOLECULAR NEUROBIOLOGY 1 or NROSCI 2100 - CELLULAR AND MOLECULAR NEUROBIOLOGY 1
- MSNBIO 2101 - CELLULAR & MOLECULAR NEUROBIOLOGY 2 or NROSCI 2101 - CELLULAR & MOLECULAR NEUROBIOLOGY 2
- MSNBIO 2102 - SYSTEMS NEUROBIOLOGY or NROSCI 2102 - SYSTEMS NEUROBIOLOGY
- MSNBIO 2624 - GRANT WRITING

Note:

In addition to University requirements for graduate degrees, students are also required to obtain research experience in at least two separate laboratories; attend journal clubs and research seminars; pass a reprint exam following their first year of study, a comprehensive exam, and a doctoral dissertation and defense; and, to serve as a teaching assistant for at least one term (or course).

Integrative Molecular Biology, PhD

Degree Requirements

This is an accelerated program that provides the opportunity for students to complete their degrees in approximately 4 years. Students enter the Program in the summer session, and after performing three rotations identify an advisor and area of research. Areas of research focus include Genomics, Proteomics, and Gene Function and Cellular and Developmental Dynamics. Required course work is completed during the first year. At the end of the first year students take a comprehensive examination that includes the submission of a research proposal to national fellowship programs. Students receive career mentoring during the third and fourth years to ensure a seamless transition to the postdoctoral level. Additional information can be found at the following Web site: www.pimb.pitt.edu/curriculum.php.

A minimum of 72 credits beyond the baccalaureate degree is required for the PhD degree. 32 of these credits are completed taking required and elective course work, and 40 of these credits are taken as dissertation research credits upon completing the comprehensive examination and advancing to candidacy. Required course work includes the following:

- MSIMB 2000 or IMB 2000 - LABORATORY RESEARCH ROTATIONS - 9 credits - taken in the summer prior to the first year
INTBP 2290 - SCIENTIFIC ETHICS AND THE RESPONSIBLE CONDUCT OF RESEARCH - taken during the summer of the second year

BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS I

MSIMB 2050 or
IMB 2050 - PIMB RESEARCH SEMINAR - the Department/Program Seminar and Journal Club/Conference are taken each fall and spring term until graduation

Advanced Elective Courses (6 credits total)

A large number of courses are available and are listed on the following Web site: www.pimb.pitt.edu/curriculum.php - Students are required to select courses in more than one of the following disciplines: molecular genetics, biochemistry, cell biology, and developmental biology.

Critical European Culture Studies Program

The PhD Program in Critical European Culture Studies offers a flexible interdisciplinary curriculum that appreciates the idea of Europe as a historically dynamic discourse. This new graduate program offers students discipline-specific training while fortifying it with a focus on broader issues such as transnationalism, migration, and cultural identity. It allows students to work across disciplinary boundaries to explore in depth the culture of Europe and develop new configurations in European and national cultural studies: European Studies and German/Russian/Polish/English/French/Italian/etc. These may include literary, historical, anthropological, media-based, and other studies.

Contact Information

Program Director: Randall Halle
Main Office: 454 Cathedral of Learning
412-624-6564
E-mail: rhalle@pitt.edu
www.cecs.pitt.edu

Admissions

Admission Requirements:

- a Master's degree in a field related to Critical European Culture Studies
- proficiency in English (for non-native English speakers, TOEFL scores should be provided),
- proficiency in a second European-related language. Proficiency in this European language should be at a level sufficient to study at a European University and may be demonstrated by:
  1) semester-length enrollment in a European University OR
  2) a minimum score of Advanced Low or the equivalent on the ACTFL/OPI or a similar score on a nationally or internationally recognized scale (such as the Common European Framework of Reference for Languages).

Financial Assistance

Graduate student funding would combine both Research Fellowships and Teaching Fellowships for a total of four years of funding from Pitt sources. Research Fellowships will be awarded during the first and last years. In other years, Teaching Fellowships give students experience teaching within specific departments.

In addition, students will receive one summer fellowship to offer research opportunities and language improvement in Europe (students may also supplement traditional summer fellowship amounts with research and travel funds from other sources such as the European Studies Center and the Center for Russian and Eastern European Studies, when necessary).

Affiliated Faculty
Critical European Culture Studies, PhD

Credit Requirement:

The requirements for the PhD are at least 72 graduate-level credits, including language courses, elective courses in a single discipline and five required core courses. The core required courses are an Introduction to Literary and Theory Course, a Theory of Europe Course, a EU Studies Core Course, a Pedagogy Course and a research methodology course (ethnography, digital humanities, oral history, translation studies, or any other suitable methodology course that serves the students research interests and goals).

PhD Qualifying Examination:

Students take the PhD qualification exam during their 3rd semester in the program. They provide a reading list composed of all the texts read in the graduate courses up to this point. In addition to that they also submit two papers, one written in English and the other in their chosen primary European language.

Supervised Teaching Experience:

Supervised teaching experience is an integral part of the doctoral program. All PhD students will be given an opportunity to teach either a language, European history or a European culture course in their second and third years of the PhD program for a total of four semesters. This experience will serve as preparation for scholarly and professional careers. Students will be supported by a pedagogy seminar to prepare and aid them.

Comprehensive Examination:

Supervised teaching experience is an integral part of the doctoral program. All PhD students will be given an opportunity to teach either a language, European history or a European culture course in their second and third years of the PhD program for a total of four semesters. This experience will serve as preparation for scholarly and professional careers. Students will be supported by a pedagogy seminar to prepare and aid them.

Dissertation Overview:

Upon completion of the comprehensive examination and all other requirements, during the 5th semester, the student files an application for admission to candidacy for the Doctor of Philosophy. In consultation with a dissertation advisor the student presents a prospectus of a dissertation to a doctoral committee. The dissertation prospectus (10-15 pages) completed by the student gives a brief introduction to the topic, previous and related research done on the topic, and the specific lines of inquiry, including methodologies and specific skills used, that the dissertation will pursue. In addition, students should address how work on the dissertation will embed them in academic and non-academic networks. Students should also address how the outcome of their dissertation will address non-academic audiences? (for example, Cultural institutions, NGOs, Governmental institutions, the creative and cultural industry). After the advisor approves this prospectus, the student will defend the prospectus to the doctoral committee. Faculty members affiliated with CECS from at least three different departments should constitute the members of the doctoral committee.

Language Requirement:

By the time they defend their dissertation overviews, the students must also demonstrate an intermediate-level proficiency in a third language (in addition to English and the other, primary research language) on one of the following ways:

- passing an intermediate-level language sequence with a grade of "B" or better;
- take a nationally recognized exam such as the OPI, verifying intermediate proficiency;
- or take a departmental exam verifying such proficiency.
Dissertation Defense:

The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and is open to the University community. The dissertation should engage a European-related question and include ethnographic, oral historical, digital, or other methodological approaches relevant to the chosen problematic of the research project. Due to the interdisciplinary nature of the program and the dissertation committees, the dissertation must be written in English.

Center for Cultural Studies

The Graduate Program for Cultural Studies is a certificate-granting intellectual center for interdisciplinary cultural critique and analysis. The program fosters the intensive study of cultural formations, past and present, from around the world. In its course offerings and other activities, the program draws upon over one hundred faculty affiliate members and ninety enrolled graduate certificate students from many of Pitt's departments and schools. The program's varied faculty members and students consistently exchange ideas about studying culture, beyond national boundaries and disciplinary divisions. The program stands as an institutional forum for responding to the increasing global need to engage, through interdisciplinary and postdisciplinary lenses, the problematics of culture.

The program addresses debates concerning the theory of texts and their production; the relationship between culture and politics; the formation of disciplines and institutions; and the nature of cultural antagonisms and crises. It features a variety of recent methodologies of historical and textual interpretation, and offers students opportunities to work with faculty and other students from the following departments, programs, and schools: Anthropology, Bioethics, Classics, Communication, East Asian Languages and Literatures, Education, English, Film and Media Studies, French and Italian Languages and Literatures, Gender, Sexuality, and Women's Studies, German Languages and Literatures, Hispanic Languages and Literatures, History, History and Philosophy of Science, History of Art and Architecture, Law, Library Science, Linguistics, Medicine, Music, Philosophy, Political Science, Public and International Affairs, Public Health, Religious Studies, Slavic Languages and Literatures, Social Work, Sociology, and Theatre Arts.

The program offers a master's certificate and doctoral certificate in cultural studies, which enhance MA and PhD degrees in the disciplines.

Contact Information

Director: Dr. Ronald J. Zboray
Main Office: 401C Cathedral of Learning
Phone: 412-624-6492
Fax: 412-624-7232
E-mail: cultural@pitt.edu
www.culturalstudies.pitt.edu/

Admissions

Students who wish to apply to the certificate program must be enrolled in a graduate or professional program at the University of Pittsburgh and must be in good academic standing. A student may earn either a master's certificate or a doctoral certificate, but not both.

Financial Assistance

Two one year fellowships are awarded annually to outstanding resident doctoral students who have passed comprehensive examinations.

Publications

Cultural studies faculty edit journals of international renown, including boundary 2 and Critical Quarterly, leading publications in the study of culture. The Program Director is co-editor of the Oxford History of Popular Print Culture, vol. 5, United States, to 1860.
Affiliated Faculty

http://www.culturalstudies.pitt.edu/faculty

Cultural Studies, Doctoral Certificate

This interdisciplinary program is concerned with cultural critique and analysis. The program fosters the intensive study of cultural formations, past and present, from around the world. The methodologies employed derive from the most advanced historical, social, and literary models. The program, open to students who are and must be discipline-trained and discipline-oriented, provides a transcultural-critical expertise not generally available in specific departments. The faculty is drawn from twenty-five areas of the humanities and social sciences at the University. The program is open to any student enrolled full time in any graduate or professional program at the University of Pittsburgh; certificates are granted at both Master's and PhD levels. Two fellowships are offered annually to outstanding students who have passed their doctoral comprehensive examinations.

Requirements for the Doctoral Certificate

The following are course requirements (27 credits) for the doctoral certificate in cultural studies:

- Common Seminar (CLST 2050)
- Three core courses (one from each group): A, B, or C (courses are listed at http://www.culturalstudies.pitt.edu/courses)
- One designated cultural studies course (D) in the student's home department or school
- One designated cultural studies course (D) outside the student's home department

Students from departments without second language requirements are expected to demonstrate the ability to use primary and secondary texts in one language other than English. Courses are regularly offered in the language departments toward the achievement of this level of reading proficiency and those departments will schedule individual written examinations to demonstrate this ability.

Virtually all of the program's courses are cross-listed with offerings in other departments and schools. Each cross-listed course counts for credit both in its home department and in the cultural studies program. Thus, the certificate program normally requires only one or two extra courses beyond those mandated by students' disciplinary degree program.

Cultural Studies, Master's Certificate

This interdisciplinary program is concerned with cultural critique and analysis. The program fosters the intensive study of cultural formations, past and present, from around the world. The methodologies employed derive from the most advanced historical, social, and literary models. The program, open to students who are and must be discipline-trained and discipline-oriented, provides a transcultural-critical expertise not generally available in specific departments. The faculty is drawn from twenty-five areas of the humanities and social sciences at the University. The program is open to any student enrolled full time in any graduate or professional program at the University of Pittsburgh; certificates are granted at both Master's and PhD levels. Two fellowships are offered annually to outstanding students who have passed their doctoral comprehensive examinations.

Requirements for the Master's Certificate

Following are course requirements (15 credits) for the master's certificate in cultural studies:

- Common Seminar (CLST 2050)
- One core course from group A or B (courses are listed at http://www.culturalstudies.pitt.edu/courses)
- One designated cultural studies course (D) in the student's home department or school
- One designated cultural studies course (D) outside the student's home department or a course from group C

Digital Studies and Methods Program
Graduate Certificate in Digital Studies and Methods

This certificate offers graduate students at the University of Pittsburgh the opportunity to acquire a proactive, mindful engagement with digital methods in the humanities and allied social sciences. While interpretive scholars have been applying computational methods to their work for as long as there have been digital computers, the arrival of the World Wide Web witnessed a more expansive group of humanists and social scientists, armed with a new array of interpretive possibilities, joining the conversation about how computing can productively enrich their research. In these recent years, such scholars have turned to using the computer not only as a revolutionary programmable calculator but also as a medium of connection, capable of supporting a wide number of approaches to scholarly investigation, interpretation, and expression. In sum, they focus on what it means to be human in a world where the dominant force-for-change seems to be technology. The Graduate Certificate in Digital Studies and Methods is designed to welcome students into this community.

Being a mode of inquiry with an expansive set of methods and tools, the use of digital techniques within the humanities and allied social sciences requires a pedagogical approach that relies on not only lecture and seminar time, but also hands-on workshop opportunities where students can apply the techniques they have been learning and discussing. To this end, this certificate includes traditional classroom hours as well as studio-based learning experiences that provide the hands-on, peer- and mentor-supported experience that this digitally-attentive approach to interpretive scholarship requires.

The methods, skills, and techniques that the students enrolled in this certificate might encounter include: network analysis, topic modeling, digital visualization techniques, geographic information systems (GIS), effective data modeling practices, and approaches to text analysis focused on the use of markup languages.

Contact Information

Graduate Advisor: Alison Langmead
Mailing Address: 104 Frick Fine Arts
Physical Address: 116 Frick Fine Arts (Visual Media Workshop)
412-648-2407
adlangmead@pitt.edu

Enrollment

The graduate certificate in Digital Studies and Methods (DSAM) consists of courses totaling 15 credit hours. Any student enrolled in a graduate program at the University of Pittsburgh, and who is in good academic standing according to the guidelines of their unit of matriculation, is eligible to apply.

Digital Studies and Methods Certificate

Department of East Asian Languages and Literatures

The Department of East Asian Languages and Literatures (EALL) offers an interdisciplinary Master of Arts in East Asian Studies (IDMA), focusing on China or Japan.

Contact Information

Department Chair (EALL): Hiroshi Nara
Main Office: 2714 Cathedral of Learning
Graduate Administrator: Keanna Cash
412-624-5227
Fax: 412-624-3458
E-mail: kec176@pitt.edu
http://deall.pitt.edu/graduate

Admission and Application Form: To apply, go to http://deall.pitt.edu/graduate/apply and click on Apply Yourself.

The interdisciplinary Master of Arts degree in East Asian studies (IDMA) combines advanced language training with study in the social sciences and humanities focusing on East Asia. It is designed for graduate students who plan professional careers in government, business, journalism, or pre-
college teaching; or for those who want intensive area training before pursuing a doctoral program in a particular discipline. The IDMA is typically a two-year program. It is designed for students who have already had at least two years of Chinese or Japanese language study. The interdisciplinary nature of the program comes not from specially constructed interdisciplinary courses but from taking a planned complement of graduate-level courses in different departments. The strength of this interdisciplinary approach lies in the fact that students are able to elect to work with faculty in several disciplines, as well as to take courses in different areas in the humanities and social sciences. The applicant's academic interests must be compatible with the expertise of the East Asian faculty at the University of Pittsburgh.

Applicants for admission must submit a two-page career statement in English that identifies the student's academic and intellectual goals. They must submit transcripts of all college-level work, three letters of recommendation in English, a writing sample in English, and scores on the verbal, quantitative, and writing assessment-analytical sections of the Graduate Record Examination. International applicants whose first language is not English are required to submit the TOEFL administered by the Educational Testing Service; The required TOEFL score of 90 (with at least a score of 22 in all of the four sections of speaking, listening, reading, and writing); the required minimum IELTS of 7.0 (with at least 6.5 in each of its four sections). The deadline each year for submitting applications is January 15. Notification can be expected by the middle of March. The program admits students only for the fall term.

Financial Assistance

Current as well as prospective students in Asian Studies are eligible to apply for a variety of scholarships and fellowships administered by the Asian Studies Center. See the Web site http://www.ucis.pitt.edu/asc/funding/graduate for descriptions of awards.

The dean of the Dietrich School of Arts and Sciences has approved Tuition Reduction Scholarships for out-of-state students accepted into the IDMA program each year. As a result, these IDMA students pay in-state tuition rates.

Faculty

The Asian Studies faculty affiliated with the IDMA Program comprise an outstanding group of specialists in the social sciences and humanities. They share a common dedication to teaching and a vigorous commitment to scholarly research as well as service to the profession. Academic disciplines of individual faculty members and their teaching specializations are noted on the website above.

Dietrich School of Arts and Sciences Faculty

Course Note

Not all courses are offered every term. Undergraduate courses at the 1000 level can be carried for graduate credit. No more than 15 credits of undergraduate courses at the 1000 level can be carried for graduate credit.

East Asian Studies, MA/MBA

Admission to the MA/MBA Joint Degree Program

Qualified students may simultaneously earn a master's degree in business administration and an interdisciplinary Master of Arts in East Asian Studies. Students enrolled in the joint degree program take MBA and MA course work concurrently. Students will normally be expected to complete the program in five consecutive terms, beginning in the fall term of the first academic year and ending in the spring term of the following year. Students may, however, extend their program of study in order to pursue further language acquisition or an internship.

Prospective students must meet the full set of admission requirements for MBA study in the Joseph M. Katz Graduate School of Business and for the MA program of graduate study in the Dietrich School of Arts and Sciences. Students should first apply for admission to the MBA program. After admission to the MBA program, applicants to the MA program will be assessed by review panels of appropriate A&S faculty. To obtain MBA application forms, contact: University of Pittsburgh, Joseph M. Katz Graduate School of Business, Office of Admissions, Pittsburgh, PA 15260; phone: 412-648-1700; fax: 412-648-1659; e-mail: mba-admissions@katz.business.pitt.edu.
East Asian Studies, MA

The interdisciplinary Master of Arts degree in East Asian studies (IDMA) combines advanced language training with study in the social sciences and humanities focusing on East Asia. It is designed for graduate students who plan professional careers in government, business, journalism, or pre-college teaching; or for those who want intensive area training before pursuing a doctoral program in a particular discipline. The IDMA is typically a two-year program. It is designed for students who have already had at least two years of Chinese, Japanese, or Korean language study. The interdisciplinary nature of the program comes not from specially constructed interdisciplinary courses but from taking a planned complement of graduate-level courses in different departments. The strength of this interdisciplinary approach lies in the fact that students are able to elect to work with faculty in several disciplines, as well as to take courses in different areas in the humanities and social sciences. The applicant's academic interests must be compatible with the expertise of the East Asian faculty at the University of Pittsburgh. IDMA students are eligible to apply for a variety of scholarships and fellowships administered by Asian Studies. See the Web site www.ucis.pitt.edu/asc and click on Funding for descriptions of awards.

Requirements for the MA

Requirements for the IDMA

The interdisciplinary Master of Arts in East Asian Studies (IDMA) is intended primarily for predoctoral students who want intensive area training before pursuing a doctoral program in a particular discipline, or for those planning professional careers in government, business, journalism, or pre-college teaching.

Credit Requirements:
Students must earn a minimum of 30 credits of course work (excluding language credits) in two or more departments with an overall GPA no lower than 3.0. At least half of these credits must be carried in courses numbered 2000 or above. In addition, EAS 2005 - SOURCES AND METHODS IN EAST ASIA , a research methodology course, must be taken in the first year.

Language Requirement:
Students must have successfully completed two years of Chinese or Japanese, language training in order to apply to the program and must continue their language study as part of their graduate work. A minimum of three years' college-level language study or its equivalent is necessary to fulfill the language requirement for the degree.

Course Specialization:
Students who specialize in China must take at least one 3-credit course on Japan, and those who specialize in Japan must take at least one 3-credit course on China.

History Courses:
Six of the required credits must be taken in course work relating to the ancient and modern history of China or Japan.

Thesis:
The thesis topic must be approved by the student's academic advisor and a faculty committee of three, which regularly included the academic advisor. The faculty committee must present at least two different departments. The thesis must demonstrate an ability to research primary East Asian language materials.

Oral Comprehensive Examination:
When course work and thesis are completed, the student must pass an oral comprehensive examination administered by the student's faculty committee.

Department of Economics

The aim of the doctoral program in economics at the University of Pittsburgh is to prepare students to be professional economists in academia, business, or government.

The normal time to complete the PhD is five years. The Department of Economics does not offer a master's degree program. Nevertheless, graduate students may apply for a Master of Arts (MA) under specific circumstances as described below.

1. Continuing Master's Degree
Continuing students may apply for an MA in economics after they have passed all preliminary examinations and have at least 30 credits in graded coursework at the 2000 or 3000 level. In addition, their GPA must be 3.0 or higher in all courses counting toward the 30-credit minimum.

2. Non-continuing Master's Degree
The Graduate Committee may recommend that a MA in economics be awarded to a student who is leaving the PhD program either voluntarily or
because of dismissal. The requirements for the terminal master's degree are: 1) either passing each of the seven first year courses with a minimum grade of B or passing one of the preliminary exams; and, 2) completing 30 credits of graduate level coursework with a cumulative GPA of 3.0. Continuing students do not qualify for a non-continuing master's degree.

Faculty members have a wide variety of research interests. Currently, the department's strengths are greatest in the following fields:

- Comparative Systems and Development Economics
- Econometrics
- Economic History
- Experimental Economics
- International Economics
- Labor Economics
- Macroeconomics
- Microeconomic Theory
- Public Economics
- Urban Economics

Contact Information

Department Chair: David Huffman
Director of Graduate Studies: Werner Troesken
Main Office: 4901 Wesley W. Posvar Hall
412-648-1730
Fax: 412-648-1793
E-mail: econdpt@pitt.edu
www.econ.pitt.edu

Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Economics, Graduate Administrator Brian Deutsch, 4911 Wesley W. Posvar Hall, Pittsburgh, PA 15260. Phone: 412-648-7270. Fax: 412-648-1793. E-mail: brd51@pitt.edu.

Admissions

Applicants for admission must submit transcripts of all college-level work, three letters of recommendation, a career statement that addresses the applicant's personal and professional goals and the reasons for pursuing doctoral study in economics, as well as and scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination. International applicants whose first language is not English are required to submit official scores from either the TOEFL administered by the Educational Testing Service with a minimum score of 90 on the internet-based test (with at least a score of 22 in all four sections). Applicants may also submit scores from the IELTS administered by the University of Cambridge, Local Examinations Syndicate. The minimum acceptable score is 7.0, with at least a score of 6.5 in each of the 4 sections (taking the academic writing and reading modules). Application must be received by January 15. The department admits students only for the fall term.

Financial Assistance

The department generally offers financial support beginning with the first year of graduate study. Awards are competitive; not all students who are admitted to the program are offered fellowships. All fellowships and assistantships offer full tuition as well as a stipend and some include medical coverage. Students who are admitted without funding may qualify for funding if they pass the preliminary examinations in microeconomics and macroeconomics at the end of the first year of study.

Provided there are adequate funds, students with fellowships or teaching assistantships who make satisfactory progress toward completion of the PhD can expect their financial support to continue for up to four years beyond the first year of study.
Economics, PhD

Requirements for the PhD

Credit Requirement

The minimum requirement is 72 credit hours. Of these, 45 credit hours must be in graded course work. Core courses include

- ECON 2010 - MATHEMATICAL METH ECON ANALYSIS
- ECON 2020 - INTRO TO ECONOMETRIC THEORY
- ECON 2100 - ADVANCED MICROECONOMIC THEORY 1
- ECON 2110 - ADVANCED MACROECONOMIC THEORY 1
- ECON 2120 - ADVANCED MICROECONOMIC THEORY 2
- ECON 2130 - ADVANCED MACROECONOMIC THEORY 2
- ECON 2150 - GENERAL ECONOMETRICS

Additional Requirements

Preliminary Examinations

The PhD preliminary exams consist of a four-hour exam in microeconomic theory and a second four-hour exam in macroeconomic theory. These exams are offered in June after the first year of study. If a student fails either or both preliminary examinations, a second attempt is offered two months later in August. Students must pass both exams by the second attempt to continue in the program.

Minimum GPA

All students must attain a minimum GPA of 3.00 in 2000- and 3000-level course work in economics as well as maintain a minimum GPA of 3.00 in all courses qualifying for graduation to be certified for the PhD in economics, as well as to qualify for continued financial assistance.

Comprehensive Exam Requirement (Research Paper)

All students are required to complete a single authored, original research paper demonstrating their ability to do research in economics. This is typically begun in the latter half of the second year and completed in the first term of the third year. The paper is reviewed by two faculty members, who may ask for revisions or additions. Following their approval of the paper, the student is certified as having completed the comprehensive examination requirement.

Field Requirements

Students are required to take coursework in two major fields, consisting of two graded courses and one graded seminar in each field, and one minor field consisting of two graded courses. The two major fields must be completed within separate areas of research, as follows:

- Microeconomics
- Macroeconomics
- Applied Microeconomics
- Experimental Economics
- International, Comparative, and Developmental Economics
Econometrics
The list of fields offered within each area is periodically updated by supervising faculty members within the relevant area.

Dissertation Overview (Admission to Candidacy)

Following successful completion of the comprehensive examination, the student begins to work full time on the doctoral dissertation. This involves searching for a topic, finding a faculty advisor, and beginning preliminary research. When a topic is selected and preliminary research is underway, the student, in consultation with the advisor, forms a dissertation committee. A dissertation overview is held at which the student presents his proposal for doctoral research, preliminary findings, and a strategy for completing the work to the dissertation committee. If the dissertation committee approves of the topic and research strategy, the student can file an application for admission to candidacy for the Doctor of Philosophy.

Dissertation Defense

The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and is open to the University community.

Department of English

The Department of English offers the following degrees and certificate:

- Master of Arts (MA)
- Master of Fine Arts (MFA)
- Doctor of Philosophy (PhD)
- Certificate in Composition, Literacy and Pedagogy

Contact Information

Director of Graduate Studies: Tyler Bickford
Main Office: 526 Cathedral of Learning
412-624-6549
Fax: 412-624-6639
E-mail: engrad@pitt.edu
http://www.english.pitt.edu/graduate/

Additional information concerning the department's graduate program may be obtained from the Graduate Administrator, Department of English, University of Pittsburgh, Pittsburgh PA 15260. Phone: 412-624-6549. Fax: 412-624-6639. E-mail: engrad@pitt.edu. Web site: www.english.pitt.edu/graduate.

Admissions

Applicants for admission must submit an online application, transcripts of all college-level work, three letters of recommendation, a personal statement, a writing sample (which varies by degree-please consult the application requirements link above), and scores on the verbal reasoning, quantitative reasoning, and writing assessment-analytical sections of the Graduate Record Examination. International applicants whose first language is not English are required to submit either the TOEFL administered by the Educational Testing Service with a minimum score of 90 (with a minimum of 22 in each section), or the IELTS administered by the University of Cambridge, Local Examinations Syndicate with a minimum score of 7.0 (taking the academic writing and reading modules). Applications to the MA and PhD program will be accepted for fall term admission until December 10, and applications to the MFA program are due, January 7. Newly admitted students enter the program in the fall semester only.

Applicants can apply online at the following site: app.applyyourself.com/?id=up-as.
Financial Assistance

All PhD students are offered a non-teaching fellowship for their first year of study. Students making satisfactory progress are then ordinarily supported with renewable teaching assistantships and teaching fellowships for four more years, with the possibility of a sixth year depending on the availability of funding. All MFA students are offered either non-teaching fellowships or teaching assistantships for their first year of study, and these appointments are renewable as teaching assistantships for two more years if the students are making satisfactory progress. A limited number of graduate student assistantships are available for qualified MFA students. The department does not usually offer support to MA students.

Certificate in Composition, Literacy and Pedagogy

This graduate certificate recognizes sustained, advanced study in composition, literacy, and pedagogy. It can be awarded to students who have earned the MA, MFA, or PhD degree in the department of English, and to those earning graduate degrees in other programs and departments.

To qualify for the certificate, students must successfully complete 12 to 18 credits (depending upon the level of the certificate being awarded). More information about the certificate is online at http://www.composition.pitt.edu/graduate/graduate_more.html.

Faculty

Dietrich School of Arts and Sciences Faculty

English, PhD

Graduate and Professional Degrees

The Department of English offers a PhD emphasizing Cultural and Critical Studies, and two Master's degrees: an MA in English and an MFA in Writing. The PhD in English, open to applicants with at least a BA or its equivalent, encourages interdisciplinary scholarship. PhD students typically base their work in Composition/Rhetoric, Film Studies, or Literature, but the department fosters interdisciplinary work that draws on more than one program. The department has a strong national reputation in composition and literacy studies, children's literature, global film studies, and cultural theory. Based in the Literature Program but including faculty members and PhD students across programs are four focal areas that provide curricular and extracurricular support for student work: Children's Literature and Childhood Studies; Genealogies of Modernity; Media and Material Practices; and Race, Politics, and Empire. The MA in English provides broad familiarity with advanced studies in Composition/Rhetoric, Film Studies, and/or Literature. The MFA in Writing allows students to specialize in poetry, fiction, or nonfiction, while also integrating courses in literature and literary history. The department also offers a graduate-level certificate in Composition, Literacy, Pedagogy and Rhetoric.

Requirements for the PhD

General Requirements. The PhD requires 72 credit hours, 36 of which must be in courses at the 2000 or 3000 level, with a minimum grade point average of 3.0. Required courses are a one-credit practicum, Introduction to Graduate Study; a two-credit practicum, Introduction to Composition Pedagogy; and Seminar in Pedagogy (3 credits); additionally, three core courses are required. The remaining credits are earned through elective seminars, independent studies in preparation of the PhD project and dissertation research credits. PhD candidates must fulfill a language requirement by demonstrating reading knowledge of two languages other than English, advanced study in one language other than English, or beginning knowledge of a new language. PhD students must teach for at least two terms.

Earning the MA. PhD students may elect to earn an MA as they progress in the PhD program, although they are not required to do so. If they wish to earn the MA, they must successfully complete the two core courses listed above with a grade of B or better, and either complete the master's research paper (outlined above under "Requirements for the MA Degree"), or successfully pass their PhD comprehensive (project) examinations. Application for the MA must be made before the end of the student's fourth year in the PhD program.

The PhD Project. The PhD project fulfills the University requirement for a comprehensive examination prior to admission to doctoral candidacy. It is a historical and theoretical investigation of a topic that can be demonstrated by the student to be of long-term significance for critical study. The
project allows students to examine and synthesize a range of interests that ordinarily lead into the more detailed inquiry of a dissertation. While we no longer insist on comprehensive knowledge of all literature written in English, the project is meant to demonstrate a breadth of knowledge as well as the ability to work on a single problem. For more specific regulations governing the PhD project, please consult the PhD website listed above.

The Dissertation. After students have passed their project examinations, they will register for independent study credits in order to write a prospectus for the dissertation. The student should choose a dissertation director and a committee at this time. Once a dissertation committee has been formed, the student will submit a formal dissertation prospectus to them for approval. When the dissertation committee has approved the prospectus, the dissertation director will submit for the student an application for admission to doctoral candidacy. Once students have had their dissertation prospectus passed and have been admitted to doctoral candidacy, they should begin the work of researching and writing the dissertation. Normally students will complete the dissertation during the fifth and sixth years in the program, the fifth through the eighth terms as a teaching fellow, or the ninth through the 12th terms in residence. Once the dissertation is completed, students must successfully defend the dissertation in order to earn the PhD.

English, MA

Graduate and Professional Degrees

The Department of English offers a PhD emphasizing Cultural and Critical Studies, and two Master's degrees: an MA in English and an MFA in Writing. The PhD in English, open to applicants with at least a BA or its equivalent, encourages interdisciplinary scholarship. PhD students typically base their work in Composition/Rhetoric, Film Studies, or Literature, but the department fosters interdisciplinary work that draws on more than one program. The department has a strong national reputation in composition and literacy studies, children's literature, global film studies, and cultural theory. Based in the Literature Program but including faculty members and PhD students across programs are four focal areas that provide curricular and extracurricular support for student work: Children's Literature and Childhood Studies; Genealogies of Modernity; Media and Material Practices; and Race, Politics, and Empire. The MA in English provides broad familiarity with advanced studies in Composition/Rhetoric, Film Studies, and/or Literature. The MFA in Writing allows students to specialize in poetry, fiction, or nonfiction, while also integrating courses in literature and literary history. The department also offers a graduate-level certificate in Composition, Literacy, Pedagogy and Rhetoric.

Requirements for the MA

General Requirements. The MA requires the completion of ten courses (30 credit hours). Three of these courses are a one-credit Introduction to Graduate Studies; a core course for one of the programs of the PhD (in Composition, Film, or Literature); and a course in the scholarship of pedagogy. MA students must complete a master's research paper in an elective course of their choice (see below), and must fulfill a language requirement by demonstrating reading knowledge of a language other than English or take the appropriate coursework in the study of a language other than English, undertaking the advanced study of a language, or beginning a new language.

Master's Research Paper. All MA students must also complete a master's research paper in an elective course of their choice. The master's research paper should be of professional article length, defined by the Modern Language Association (MLA) as 6,000-8,000 words not including documentation. Students must engage in primary research beyond course readings and/or what is ordinarily required for a term paper, and the Master's Research paper must reflect that research. Students must consult an instructor, and receive the instructor's approval, no later than the end of the add/drop period if they wish to write their master's research paper for that instructor's seminar. The instructor of the seminar will be solely responsible for evaluating the paper. The master's research paper must be completed no later than the last day of the spring term of a student's second year, or fourth term in residence. In order for the master's research paper to count toward earning the MA, a student must receive a grade of B or better on the paper and as a final grade for the course in which the paper was completed.

English, MFA

Requirements for the MFA

General Requirements. The MFA requires 36 credit hours with a minimum grade point average of 3.0, plus the completion of an acceptable final manuscript. Requirements vary according to the student's area of major interest (fiction, nonfiction, or poetry), but the degree requires a combination of writing workshops, graduate-level readings courses, and English courses outside the Writing Program (in composition, literature, or film). Also
required is ENGLIT 2608: Genres and Genre Theory. Further information about requirements for each MFA genre can be found in the English Department's graduate handbook. There are no language requirements for MFA students.

**The Final Manuscript.** The final manuscript is equivalent to the MA comprehensive examination. It consists of a book-length manuscript of the student's best work in the area of major interest - 150 pages (typed, double-spaced, standard format) for fiction and nonfiction, and 50 pages for poetry. The manuscript shall be submitted to a committee of three English faculty members-two writing graduate faculty in the student's area of major interest and one English graduate faculty member outside the writing program. The student may recommend committee members, but the writing program director has final approval.

**Composition, Literacy and Pedagogy Certificate**

**Graduate and Professional Degrees**

The Department of English offers a PhD emphasizing Cultural and Critical Studies, and two Master's degrees: an MA in English and an MFA in Writing. The PhD in English, open to applicants with at least a BA or its equivalent, encourages interdisciplinary scholarship. PhD students typically base their work in Composition/Rhetoric, Film Studies, or Literature, but the department fosters interdisciplinary work that draws on more than one program. The department has a strong national reputation in composition and literacy studies, children's literature, global film studies, and cultural theory. Based in the Literature Program but including faculty members and PhD students across programs are four focal areas that provide curricular and extracurricular support for student work: Children's Literature and Childhood Studies; Genealogies of Modernity; Media and Material Practices; and Race, Politics, and Empire. The MA in English provides broad familiarity with advanced studies in Composition/Rhetoric, Film Studies, and/or Literature. The MFA in Writing allows students to specialize in poetry, fiction, or nonfiction, while also integrating courses in literature and literary history. The department also offers a graduate-level certificate in Composition, Literacy, Pedagogy and Rhetoric.

**Certificate in Composition, Literacy and Pedagogy**

http://www.composition.pitt.edu/graduate/certificate

This graduate certificate recognizes sustained, advanced study in composition, literacy, and pedagogy. It can be awarded to students who have earned the MA, MFA, or PhD degree in the department of English, and to those earning graduate degrees in other programs and departments.

To qualify for the certificate, students must successfully complete 12 to 18 credits (depending upon the level of the certificate being awarded). More information about the certificate is online at http://www.composition.pitt.edu/graduate/graduate_more.html

**Certificate**

This graduate certificate recognizes sustained, advanced study in composition, literacy, pedagogy and rhetoric at the University of Pittsburgh. It can be awarded to students who have earned the MA, MFA, or PhD degree in the Department of English, and to those earning graduate degrees in other departments, programs, and institutions.

To qualify for the certificate, students must successfully complete ENGLIT 2500 - SEMINAR IN PEDAGOGY (or an equivalent course in writing pedagogy), and a set of additional courses described below: the MA and MFA certificate will require three (3), and the PhD certificate five (5) additional courses. These courses are selected from among an array of seminars that represent intersecting strands of work in the Composition Program:

- **Composition**, including study of the theories and practices of writing, within and beyond the field of Rhetoric and Composition;
- **Literacy**, including research into public rhetorics and the literacies of diverse groups in the larger culture beyond the academy;
- **Pedagogy**, including historical and critical inquiry into issues of schooling, teaching, and the institutions of academic writing;
- **Rhetoric**, including the history and theory of rhetoric and its functioning in institutional, political and literary spheres of communication.

Students interested in the certificate should see the Director of Composition for initial advising. He or she will identify qualifying courses for the certificate in English and may approve courses in other departments at the University of Pittsburgh. One course of Directed Study may also be accepted for the certificate, with the approval of the Director of Composition. In order to graduate with this certificate, students must apply to the certificate program at least one semester in advance of their graduation. The application form can be obtained from the Graduate Administrator in the Department of English (engrad@pitt.edu (mailto:engrad@pitt.edu)).
To qualify for the Graduate Certificate in composition, Literacy, Pedagogy, and Rhetoric, students are further required to produce a teaching portfolio. The portfolio must be submitted to the Director of Composition at least 3 weeks before the end of the semester in which the student plans to graduate. The portfolio assembles materials that document at least one of the following:

- An ability to design and teach an effective undergraduate course or community-based writing workshop;
- Significant work in support of teaching: for instance, as a mentor to beginning teachers, or as an assistant in the administration of the Composition Program, the Western Pennsylvania Writing Project, or the Writing Center;
- Demonstrated ability as a writing tutor in the Writing Center, in other university support services, or in afterschool programs for children.

Portfolios characteristically include teaching materials such as syllabi, assignments, exercises, and observations by peers and faculty members. Administrative documents may include reports, proposals, newsletters, Web pages, and other materials that demonstrate the work of the position, as well as statements of evaluation. Portfolios are reviewed by a committee of the composition faculty.

Notice that students have been awarded the Graduate Certificate in Composition, Literacy, Pedagogy, and Rhetoric appears on their final transcript for the MA, MFA, or PhD degree.

Notes:

MA or MFA candidates without a teaching assistantship may replace ENGLIT 2500 - SEMINAR IN PEDAGOGY with another course in composition, literacy and pedagogy and/or rhetoric. Courses that satisfy this requirement are designated each year by the Director of Composition.

Candidates are urged to consult with a member of the composition faculty while preparing a teaching portfolio.

Composition, Literacy and Pedagogy Certificate, MA

Graduate and Professional Degrees

The Department of English offers a PhD emphasizing Cultural and Critical Studies, and two Master's degrees: an MA in English and an MFA in Writing. The PhD in English, open to applicants with at least a BA or its equivalent, encourages interdisciplinary scholarship. PhD students typically base their work in Composition/Rhetoric, Film Studies, or Literature, but the department fosters interdisciplinary work that draws on more than one program. The department has a strong national reputation in composition and literacy studies, children's literature, global film studies, and cultural theory. Based in the Literature Program but including faculty members and PhD students across programs are four focal areas that provide curricular and extracurricular support for student work: Children's Literature and Childhood Studies; Genealogies of Modernity; Media and Material Practices; and Race, Politics, and Empire. The MA in English provides broad familiarity with advanced studies in Composition/Rhetoric, Film Studies, and/or Literature. The MFA in Writing allows students to specialize in poetry, fiction, or nonfiction, while also integrating courses in literature and literary history. The department also offers a graduate-level certificate in Composition, Literacy, Pedagogy and Rhetoric.

Certificate in Composition, Literacy and Pedagogy

http://www.composition.pitt.edu/graduate/certificate

This graduate certificate recognizes sustained, advanced study in composition, literacy, and pedagogy. It can be awarded to students who have earned the MA, MFA, or PhD degree in the department of English, and to those earning graduate degrees in other programs and departments.

To qualify for the certificate, students must successfully complete 12 to 18 credits (depending upon the level of the certificate being awarded). More information about the certificate is online at http://www.composition.pitt.edu/graduate/graduate_more.html

Composition, Literacy and Pedagogy Certificate, MFA

Graduate and Professional Degrees
The Department of English offers a PhD emphasizing Cultural and Critical Studies, and two Master's degrees: an MA in English and an MFA in Writing. The PhD in English, open to applicants with at least a BA or its equivalent, encourages interdisciplinary scholarship. PhD students typically base their work in Composition/Rhetoric, Film Studies, or Literature, but the department fosters interdisciplinary work that draws on more than one program. The department has a strong national reputation in composition and literacy studies, children's literature, global film studies, and cultural theory. Based in the Literature Program but including faculty members and PhD students across programs are four focal areas that provide curricular and extracurricular support for student work: Children's Literature and Childhood Studies; Genealogies of Modernity; Media and Material Practices; and Race, Politics, and Empire. The MA in English provides broad familiarity with advanced studies in Composition/Rhetoric, Film Studies, and/or Literature. The MFA in Writing allows students to specialize in poetry, fiction, or nonfiction, while also integrating courses in literature and literary history. The department also offers a graduate-level certificate in Composition, Literacy, Pedagogy and Rhetoric.

Certificate in Composition, Literacy and Pedagogy

http://www.composition.pitt.edu/graduate/certificate

This graduate certificate recognizes sustained, advanced study in composition, literacy, and pedagogy. It can be awarded to students who have earned the MA, MFA, or PhD degree in the department of English, and to those earning graduate degrees in other programs and departments.

To qualify for the certificate, students must successfully complete 12 to 18 credits (depending upon the level of the certificate being awarded). More information about the certificate is online at http://www.composition.pitt.edu/graduate/graduate_more.html

Composition, Literacy and Pedagogy Certificate, PhD

Graduate and Professional Degrees

The Department of English offers a PhD emphasizing Cultural and Critical Studies, and two Master's degrees: an MA in English and an MFA in Writing. The PhD in English, open to applicants with at least a BA or its equivalent, encourages interdisciplinary scholarship. PhD students typically base their work in Composition/Rhetoric, Film Studies, or Literature, but the department fosters interdisciplinary work that draws on more than one program. The department has a strong national reputation in composition and literacy studies, children's literature, global film studies, and cultural theory. Based in the Literature Program but including faculty members and PhD students across programs are four focal areas that provide curricular and extracurricular support for student work: Children's Literature and Childhood Studies; Genealogies of Modernity; Media and Material Practices; and Race, Politics, and Empire. The MA in English provides broad familiarity with advanced studies in Composition/Rhetoric, Film Studies, and/or Literature. The MFA in Writing allows students to specialize in poetry, fiction, or nonfiction, while also integrating courses in literature and literary history. The department also offers a graduate-level certificate in Composition, Literacy, Pedagogy and Rhetoric.

Certificate in Composition, Literacy and Pedagogy

http://www.composition.pitt.edu/graduate/certificate

This graduate certificate recognizes sustained, advanced study in composition, literacy, and pedagogy. It can be awarded to students who have earned the MA, MFA, or PhD degree in the department of English, and to those earning graduate degrees in other programs and departments.

To qualify for the certificate, students must successfully complete 12 to 18 credits (depending upon the level of the certificate being awarded). More information about the certificate is online at http://www.composition.pitt.edu/graduate/graduate_more.html

Film and Media Studies Program

The Film and Media Studies Program is an interdisciplinary program offering courses in history, aesthetics, theory, and critical studies. The Film and Media Studies Program offers the following graduate degrees and certificates:

PhD in Film and Media Studies (in conjunction with five Associated Departments)
Terminal MA in Film Studies and Media
Contact Information

Program Director: Randall Halle
Main Office: 454 Cathedral of Learning
412-624-6564
E-mail: rhalle@pitt.edu
www.filmstudies.pitt.edu

Admissions

Applicants will submit an application to the Film Studies and Media PhD program, identifying an Area of Concentration from the list of associated departments (e.g. English, French, Hispanic, History of Art and Architecture, and Slavic). The name of the Associated Department will appear on the student's transcript when the degree is granted. The application will be vetted simultaneously by Film and Media Studies and the Associated Department. Only one application fee is required.

Students who have already entered graduate programs in associated departments are welcome to apply to the Film Studies and Media PhD through the normal application process. If accepted, they are eligible to transfer a maximum of 24 credits towards the Film Studies and Media PhD degree requirements, and can petition to waive required courses that have been fulfilled, following normal University, School, and Program regulations.

Students who wish to enroll in the graduate certificate programs in Film and Media Studies (whether MA or PhD) must be matriculated for a graduate degree in a department of the Dietrich School of Arts and Sciences or in another school within the University. Students interested in pursuing a film studies certificate at any point in their career may do so by filing the appropriate form with the program director of the Film and Media Studies Program.

Financial Assistance

Financial assistance for both the PhD and the certificates will be provided by the associated department (reflecting the student's Area of Concentration). Such aid typically takes the form of scholarships, fellowships, teaching assistantships, and/or graduate student assistantships.

Affiliated Faculty

Dietrich School of Arts and Sciences Faculty

Film and Media Studies, PhD

In the Spring of 2018, the Film Studies, PhD was renamed to Film and Media Studies, PhD. Students who were enrolled prior to the Spring 2018 term have the option to stay Film Studies PhD or change to the Film and Media Studies PhD. They will have until the end of the Fall 2017 term to choose to complete the program under the current name. Students who choose to complete their program under the current name must do so by Summer 2020 term. There are no program requirement changes.

Requirements for the PhD
General Requirements. The PhD requires 72 credits. All Film and Media Studies PhD students will be required to fulfill the requirements of their associated department as well as the Film and Media Studies requirements. PhD students must take the three core courses in Film and Media Studies, as well as four elective film studies courses. Language and teaching requirements are determined by associated departments, but Film and Media Studies students will be required to serve as TA/TF for at least one Film and Media class.

Comprehensive Exam. The comprehensive exam will be taken in the student's associated department. While the exam structure will differ from department to department, in all cases:

- one component (or more) of the exam will focus on Film and Media Studies
- a second component of the exam will focus on the departmental field (including its relation to cinema)
- at least one member of the exam committee in the student's associated department will be a member of the graduate faculty in Film and Media Studies.

The Dissertation. The dissertation will be completed in the associated department and must involve film and/or media studies as subject matter incorporated with the student's area of concentration (as determined by the dissertation director). The chair of the dissertation committee will be a graduate faculty member in the student's associated department who is also member of the interdisciplinary Film and Media Studies graduate faculty. The external member of the committee will be a member of the Film and Media Studies graduate faculty from outside the associated department.

Film and Media Studies, MA

In the Spring of 2018, the Film Studies, MA was renamed to Film and Media Studies, MA. Students who were enrolled prior to the Spring 2018 term have the option to stay Film Studies masters or change to the Film and Media Studies master. They will have until the end of the Fall 2017 term to choose to complete the program under the current name. Students who choose to complete their program under the current name must do so by Summer 2020 term. There are no program requirement changes.

Requirements for the MA

General Requirements: The Terminal MA in Film and Media Studies degree will be granted only to those students who have been admitted to the PhD in Film and Media Studies but are subsequently unable to finish the program. The terminal MA provides this group of students the possibility of a terminal degree that acknowledges their time of study. A total of 30 credits are needed, including the three core courses in Film and Media Studies and five electives in film studies.

Master's Research Paper: The Master's paper is required for a terminal MA in Film. This project can be based on a paper prepared for a Film and Media Studies class. It should be between 6,000-8,000 words following MLA format. One Film and Media Studies faculty member will supervise the paper (most likely the instructor for the class in which the paper was written). Two other film faculty members including the student's AOC Department faculty advisor and one other film faculty member will serve as readers. All three must approve the paper for it to fulfill the Film and Media Studies Terminal Master's paper requirement. To pass, a paper should coherently present original research on a topic or issue relevant to the contemporary study of time-based media and/or their histories, incorporating primary research in a cogent, scholarly fashion.

Film and Media Studies Doctoral Certificate

In the Spring of 2018, the Film Studies Doctoral Certificate was renamed to Film and Media Studies Doctoral Certificate. Students who were enrolled prior to the Spring 2018 term have the option to take the Film Studies doctoral certificate or change to the Film and Media Studies doctoral certificate. They will have until the end of the Fall 2017 term to choose to complete the
program under the current name. Students who choose to complete their program under the current name must do so by Summer 2020 term. There are no program requirement changes.

Eligibility

Students engaged in an A&S doctoral program at Pitt can enroll in the Film and Media Studies Doctoral Certificate Program at any point in the course of their study by submitting a completed Graduate Certificate Application Form to filmandmedia@pitt.edu or 454 Cathedral of Learning. The doctoral certificate is awarded only after the completion of all degree requirements for the PhD in the student's home department, school, or program.

Course Work

Six film and Media Studies courses (18 credits) including:

Core Course:

- ENGFLM 2451 - FILM HISTORY/THEORY or
- ENGFLM 2452 - FILM HISTORY/THEORY 2

Five Electives:

Including at least two areas of study (e.g., national cinema, theory/themes, genre, etc.); at least two courses must be outside the student's home department.

Research Paper

The PhD Certificate requires a research paper be written in the field of Film and Media Studies (approx. 25-30 pp. in length) and evaluated by a Film and Media Studies faculty member who teaches one of the seminars that the student takes for his/her Certificate requirements.

The procedure for so doing is as follows:
At the beginning of a Film and Media Studies course that counts for the Certificate the student will inform the faculty member teaching the course that he/she wishes for his/her seminar to count as well as the official Research Paper for the Certificate Program. The faculty member will then require of the student something more ambitious than the normal seminar paper (see Guidelines for Certificate Research Paper below) and meet with the student during the term to advise him/her.

At the end of the course the student has two options: (1) submit the Certificate Research Paper for both the course and Certificate requirements or (2) submit a paper that satisfies the course requirements and continue to work on the expanded Certificate Research Paper over the following semester. The paper should be turned in for the Certificate requirement no later than at the end of the semester following the course in which the paper was conceived.

Guidelines for Certificate Research Paper

The research paper that qualifies for the MA and/or PhD Certificates in Film and Media Studies should go beyond the average seminar paper for a course, though (as per above) it should begin as such a seminar paper in conjunction with a member of the Film and Media Studies faculty. In essence, the research paper should aspire to be one publishable in an academic journal (though there is no requirement that it actually be published).

This paper might go beyond a standard seminar paper in any or several of the following ways: (1) have a demonstrated original point of view or approach to a given topic; (2) articulate a clear and demonstrated argument about a topic that clarifies important issues in media studies; (3) involve substantial research with primary sources; (4) forge new theoretical or historical terrain; (5) consider hitherto ignored media texts. It will be up to the Film and Media Studies instructor/advisor to determine how the paper might meet some of the above standards.
Additional Conditions

- Only two directed study courses (supervised by Film and Media faculty) can be counted toward the doctoral certificate.
- All courses must be passed with a B or higher.
- Students should notify the program director of their intention to file for graduation at the beginning of their final semester.

Film and Media Studies Master's Certificate

In the Spring of 2018, the Film Studies Master's Certificate was renamed to Film and Media Studies Master's Certificate. Students who were enrolled prior to the Spring 2018 term have the option to stay Film Studies master's certificate or change to the Film and Media Studies master's certificate. They will have until the end of the Fall 2017 term to choose to complete the program under the current name. Students who choose to complete their program under the current name must do so by Summer 2020 term. There are no program requirement changes.

Eligibility

Students engaged in an A&S master's program at Pitt can enroll in the Film and Media Studies Master's Certificate Program at any point in the course of their study by submitting a completed Graduate Certificate Application Form to filmandmedia@pitt.edu or 454 Cathedral of Learning. The master's certificate is awarded only after the completion of all degree requirements for the MA in the student's home department, school, or program.

Course Work

Four Film and Media Studies courses (12 credits) including:

Core Course:

- ENGFLM 2451 - FILM HISTORY/THEORY or
- ENGFLM 2452 - FILM HISTORY/THEORY 2

Three Electives

(one outside home department)

Research Paper

The MA Certificate requires a research paper in the field of Film and Media Studies (approx. 25-30 pp. in length) to be written for and evaluated by a Film and Media Studies faculty member who teaches one of the seminars that the student takes for his/her Certificate requirements.

The procedure is as follows:
At the beginning of a Film and Media Studies course that counts for the Certificate, the student will inform the faculty member teaching the course that he/she wishes for his/her seminar to count as the official Research Paper for the Certificate Program. The faculty member will then require something more ambitious than the normal seminar paper (see Guidelines for Certificate Research Paper below) and meet with the student during the term to advise him/her.

At the end of the course the student has two options: (1) submit the Certificate Research Paper for both the course and Certificate requirements or (2) submit a paper that satisfies the course requirements and continue to work on the expanded Certificate Research Paper over the following semester.
The paper should be turned in for the Certificate requirement no later than the end of the semester following the course in which the paper was conceived.

Guidelines for Certificate Research Paper

The research paper that qualifies for the MA and/or PhD Certificates in Film and Media Studies should go beyond the average seminar paper for a course, though (as per above) it should begin as such a seminar paper in conjunction with a member of the Film Studies faculty. In essence, the research paper should aspire to be one publishable in an academic journal (though there is no requirement that it actually be published). Such a paper might go beyond a standard seminar paper in any or several of the following ways:

1. Have a demonstrated original point of view or approach to a given topic
2. Articulate a clear and demonstrated argument about a topic that clarifies important issues in media studies
3. Involve substantial research with primary sources
4. Forge new theoretical or historical terrain
5. Consider hitherto ignored media texts.

It will be up to the Film and Media Studies instructor/advisor to determine how the paper might meet some of the above standards.

Additional Conditions

- Only one directed study course (supervised by Film and Media Studies faculty) can be counted toward the master's certificate.
- All courses must be passed with a B or higher.
- Students should notify the program director of their intention to file for graduation at the beginning of their final semester.

Department of French and Italian Languages and Literatures

The Department of French and Italian offers programs leading to the MA in Italian, a PhD in French with an MA en route and the PhD in French. Students may also apply for the PhD in Film Studies with a Concentration in French (granted by Film Studies). The following tracks are offered at the MA level in French and Italian:

French Language and Literature
Italian Language and Literature

The following tracks are offered at the PhD level in French:

French Language and Literature
Film Studies with a Concentration in French
French Language and Literature with a Concentration in Romance Languages and Literatures

Students enrolled in the PhD program may take courses in the following thematic clusters:

French Language and Literature: Literature and Politics

In addition, the department encourages students to participate in various interdisciplinary programs, such as African Studies; Cultural Studies; European Union Studies; Film Studies; Gender, Sexuality, and Women's Studies; Global Studies; Medieval and Renaissance Studies; and West European Studies, where students may work toward a graduate certificate in conjunction with their degree.

Contact Information

Department Chair: Lina Insana
Main Office: 1328 Cathedral of Learning
412-624-5220
Fax: 412-624-6269
Additional information concerning the department's graduate program may be requested from the University of Pittsburgh, Department of French and Italian, Assistant to the Directors of Graduate Studies, 1328 Cathedral of Learning, Pittsburgh, PA 15260. Phone: 412-624-5220. Fax: 412-624-6263. E-mail: frit@pitt.edu.

**Graduate Degree Programs**

**Admissions**

Students accepted into the graduate program must meet the following criteria:

- They should have completed an undergraduate major (or equivalent) in the language and literature they propose to study at the graduate level or substantial coursework in a related field.
- They must be able to enroll in courses that are taught entirely in French and/or Italian. This presupposes a high level of skill in speaking, reading, and writing in their major language.
- It is recommended that incoming students have a reading knowledge of German, a second Romance language, or Latin.

Applicants for admission must submit transcripts of all college-level work, three letters of recommendation, a personal statement, a sample of their writing in the target second language and scores on the verbal, quantitative, and writing assessment-analytical sections of the Graduate Record Examination. The GRE is not required for applicants to the MA program in Italian. International applicants whose first language is not English are required to submit either the TOEFL administered by the Educational Testing Service IBT (internet-based test) with a minimum score of 90 (with at least a score of 22 in all of the 4 sections of speaking, listening, reading, and writing), or the IELTS administered by the University of Cambridge, Local Examinations Syndicate with a minimum score of 7.0 (with at least 6.5 in each of its four sections). For a complete list of required items for admission, go to www.frenchanditalian.pitt.edu/graduate/about/admissions.php.

Applications for fall term admission will be accepted until April 15. For funding consideration, applications must be completed by December 7th 2017 for French and February 1 for Italian. The department admits students only for the fall term.

**Financial Assistance**

All applicants to the graduate program in French and Italian are considered for departmental funding. The Department of French and Italian offers teaching and research positions to graduate students at all levels. Most teaching assistantships and fellowships are renewable on a year-to-year basis for students in good academic standing. Students in the PhD who adhere to guidelines established in the departmental graduate policy statement may receive up to five years of support as a teaching fellow. Students enrolled in the PhD with MA en route may receive a sixth year of funding through competitive university fellowships.

**Faculty**

http://www.frit.pitt.edu/people/faculty

**French and Italian Languages and Literatures - Film Studies - French Concentration, PhD**

The PhD in Film Studies at the University of Pittsburgh is an interdisciplinary and interdepartmental degree that stresses the history, theory, and aesthetics of international cinema, video, television, and new media. While the student will earn a PhD in Film Studies (granted by the Film Studies Program), he or she will also be a full member of French, fulfilling all requirements for the PhD in French. French will appear as an Area of Concentration on the student's transcript. Thus, the student graduating with a PhD in Film Studies will be doubly qualified: in film studies as well as in French Studies.
Students must fulfill all of the requirements for the PhD in French (listed above) and the following additional requirements:

**Core Courses in Film Studies (7 credits):**

A two-course (6 credit) sequence taken in any order:

- ENGFLM 2451 - FILM HISTORY/THEORY
- ENGFLM 2452 - FILM HISTORY/THEORY 2
- 1 credit Film Studies Proseminar ENGFLM 2905

**Note:**

*This will not count toward seminar credit within the French program and will be given on a Satisfactory/Unsatisfactory basis.*

**Electives in Film Studies (12 credits):**

- Four elective Film Studies courses (in any department).

**Note:**

*Of the total six required seminars, the student must take at least two courses taught by a member of the faculty outside of French. These courses can include the two required core courses as well as any of the four electives.*

**Additional Requirements**

*Teaching:* All film PhD students will be required to serve as TA/TF for at least one film class. If the Department of French and Italian does not offer a film course or has no TA/TF positions for a film course, students will be required to teach one term of the undergraduate course Introduction to Film (or another such introductory course developed in the future) as part of his/her overall experience as a TA/TF.

*Credit Requirement:* Minimum of 72 hours, including the master's degree, earned from any suitable combination of formal course work, independent study, research, teaching or dissertation work as detailed elsewhere in this bulletin.

*Preliminary Examination/Evaluation:* The two required core courses in Film Studies (Film History/Theory I and II) will serve as the preliminary exam in Film Studies. Successful completion of these two classes with a grade of B or better will constitute passing the preliminary examination.

To maintain funding, students must also pass the required preliminary evaluation conducted by the French faculty at the end of the first year of enrollment.

*Comprehensive Examination:* The Comprehensive Exam must contain at least one component focusing on Film Studies, and at least one component on French Studies (including its relation to cinema).

At least one member of the exam committee will be a member of the graduate faculty in Film Studies.

*Dissertation Committee:* The dissertation will be completed in the Department of French and Italian and must involve film and/or media studies as subject matter incorporated with French Studies (as determined by the dissertation director).

The Chair of the dissertation committee will be a graduate faculty member in the Department of French and Italian who is also a member of the interdisciplinary Film Studies graduate faculty. The external member of the committee will be a member of the Film Studies graduate faculty from outside the Department of French and Italian. It is expected that students will have been exposed to these faculty members in taking the required Film Studies courses (taught by the interdisciplinary Film Studies faculty), elective Film Studies courses (outside the student's associated Department), and in the Proseminar (taught by the interdisciplinary faculty).
French, PhD

Requirements for the PhD

Before students may be considered for admission to candidacy for the PhD, they must complete successfully a minimum of eight 2000-level courses (24 credits) beyond the MA (a minimum of 72 credits). In addition, the candidates must present an oral *explication de texte* before a faculty committee, satisfy PhD language requirements, and pass written and oral comprehensive examinations. Upon admission to candidacy, the candidate will write and defend a doctoral dissertation. The course work must include:

FR 2710 (if not taken at the MA level) and an additional course in literary or cultural theory.

With the advisors consent students are free to take some of the additional required courses in other departments. Students in French are encouraged to pursue certification in one of the various programs offered by the University (African Studies, Cultural Studies, European Union Studies, Film Studies, Gender, Sexuality and Women's Studies, Global Studies, Medieval and Renaissance Studies, West European Studies). However, only three exterior courses may count towards the degree in French.

With the adviser's consent,

PhD in French with a Concentration in Romance Languages and Literatures

Candidates for this concentration will typically already hold an MA in one of the Romance languages and literatures or the equivalent, and will, upon entering the program, choose two major and one minor linguistic areas from among the four language areas (French, Italian, Portuguese, and Spanish). Portuguese may not be used as one of the major areas, and one of the major areas must be French.

Field of Study

The student will also choose a major and a minor period from among the following four periods: (1) Middle Ages; (2) Renaissance and Baroque; (3) Enlightenment, Romanticism and Realism (18th and 19th centuries to 1848); (4) Modern/Postmodern. If Spanish is one of the major linguistic areas, the student will also choose, as appropriate, between the peninsular and Latin American areas.

Course Work

The candidate will then take at least four 2000-level courses in each of the two major linguistic areas, and at least two 1000-level courses in the third area. At least one of these courses will be a 2000-level course in linguistics in one of the major fields (a course in the history of the language or in comparative Romance linguistics is recommended). At least three of these courses should involve the writing of a long (or seminar-type) paper of 20-30 pages, and one of these papers must be written in English.

Dissertation Committee

The dissertation committee should include one faculty member with expertise in each of the three major periods/areas. In all cases, the choice of linguistic areas and periods will be limited by the availability of faculty and course offerings in the concerned departments.

It is expected that candidates will teach at least one language course in each of their major linguistic areas before completing the degree.

*Credit Requirement:* Minimum of 72 hours, including the master's degree, earned from any suitable combination of formal course work, independent study, research, teaching or dissertation work as detailed elsewhere in this bulletin.
Preliminary Examination/Evaluation: Students in the PhD program will undergo a preliminary evaluation at the end of the first full year of residence.

Explication de Texte: Before taking their comprehensive examinations, PhD students must present an oral explication de texte in French before a jury comprising members of the faculty.

Comprehensive Examination: Students must take written and oral comprehensive examinations on a topic with historical coverage and an topic in the area of specialization. Candidates will work with a faculty advisor and a committee to prepare the reading list in the areas chosen. The purpose of the comprehensive examinations is to ensure that the candidate is able to develop a relevant and original approach to the study of French and Francophone literature and culture. These examinations should be passed at least eight months (two terms) before the degree is to be awarded. Students may schedule their examinations only after passing all preliminary examinations and language and other requirements.

Prospectus Presentation: As soon as the comprehensive examinations have been passed, students and their advisor should agree on a dissertation committee including at least three members of the department (including the director) and one member chosen from another department in an area of expertise relevant to the dissertation topic. Usually during the third year, but in no case later than the first term of their fourth year, students must submit a prospectus to the director for circulation among the committee members. The scope, size, organization, and format of the prospectus are specified in a separate departmental document, which PhD students should receive or request as soon as they pass their comprehensive examinations.

Dissertation Defense: The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and is open to the University community.

French, MA/PhD

Requirements for PhD with MA en route

This degree is intended for students who wish to pursue the Doctor of Philosophy (PhD) degree in French Language and Literature but who do not already hold an MA in this field or in a closely-related discipline. Students must first successfully complete the requirements for the MA in French Language and Literature listed below, normally within their first two years of full-time enrollment. Students doing the PhD with the MA en route will be awarded an MA degree at the completion of these requirements:

- A minimum of ten one-term courses is required, for a total of 30 credit hours. These courses will include FR 2710 - INTRODUCTION TO LITERARY AND CULTURAL THEORY, FR 2903 - MA RESEARCH PAPER DIRECTED STUDY, and FR 2910 - COMPREHENSIVE EXAMINATION MA. Students holding Teaching Assistantships are also required to take FR 2970 - TEACHING OF FRENCH, though this does not count toward the required ten.
- Comprehensive examination: the comprehensive examination is a written examination and is given in two sessions on separate days during the fourth semester of the MA en route program. An oral interview is held after completion of the written exams to discuss the results of the exams and the MA research paper.
- Research Paper: each candidate must write a Master's Research Paper of professional quality and length.
- Second language: candidates must demonstrate a reading knowledge of a second Romance Language, or German, or Latin.

To ensure the acquisition of a broad knowledge of French literature and culture, candidates must take at least one course or one exam in each field (Middle Ages, Renaissance, 17th, 18th, 19th, and 20th centuries and African and Caribbean literatures) before they reach candidacy.

Before students may be considered for admission to candidacy for the PhD, they must successfully complete a minimum of five 2000-level courses (15 credits) beyond the MA. In addition, the candidate must present an oral explication de texte before a faculty committee, and pass written and oral comprehensive examinations. The PhD language requirement and explication de texte will normally be satisfied at the MA level. The eight courses must include:

1. FR 2710 (if not taken at the MA level) and an additional course in literary or cultural theory.
2. With the adviser's consent, students are free to take some of the additional required courses in other departments. Students in French are encouraged to pursue certification in one of the various programs offered by the University (African Studies, Cultural Studies, European Union Studies, Film Studies, Gender, Sexuality, and Women's Studies, Global Studies, Medieval and Renaissance Studies, West European Studies). However, only three exterior courses may count towards the degree in French.

Upon admission to candidacy, the candidate will write and defend a doctoral dissertation.
Italian, MA

Requirements for the MA in Italian

A minimum of ten one-term courses is required. These courses will include ITAL 2710 - INTRODUCTION TO LITERARY AND CULTURAL THEORY, ITAL 2903 - MA RESEARCH PAPER DIRECTED STUDY, and ITAL 2910 - COMPREHENSIVE EXAMINATION MA. Students holding Teaching Assistantships are also required to take ITAL 2970 - TEACHING OF ITALIAN, though this does not count toward the required ten. Candidates must also fulfill the following additional requirements:

- **Comprehensive Examination**
  - The MA comprehensive examination is a written examination and is given in three sessions on separate days during the second year of the MA program; an oral interview is held after completion of the exams to discuss the comprehensive exam results, as well as the student's research paper.

- **Research Paper**
  - Each candidate must write a Master's Research Paper (or tesina) of professional article quality and length (25 pp min.). Students must conduct research beyond the scope of any single graduate term paper, but are encouraged to develop and formulate their topic in the context of one particular seminar (or two, if seminars are thematically or otherwise related). Students will work closely with the faculty member whose field is most relevant to the chosen topic to identify appropriate areas for expansion, additional texts or case studies, and relevant methodologies. The paper must be written in Italian.

- **Second Language Candidates** must demonstrate a reading knowledge of Latin or German or a Romance language other than Italian. Other languages will be considered upon petition.

Gender, Sexuality, and Women's Studies Program

The Gender, Sexuality, and Women's Studies Program offers graduate certificates in Gender, Sexuality, and Women's Studies at both the master's and doctoral levels. The interdisciplinary curriculum draws upon faculty expertise in the arts, humanities, and social sciences; and in business, law, library and information science, nursing, medicine, public and international affairs, public health, and social work. The program provides opportunities for students who wish to focus their study on women, gender, and sexuality or who wish to add these areas as a subspecialty.

Contact Information

Acting Program Director, Fall 2018: Scott Kiesling
Acting Program Director, Spring/Summer 2019: Rachel Kranson
Main Office: 401 Cathedral of Learning
Phone: 412-624-6485
Fax: 412-624-7232
E-mail: gsws@pitt.edu
www.gsws.pitt.edu

Admissions

Interested students must make an appointment with the Director of the Gender, Sexuality, and Women's Studies program for advising.

Financial Assistance

No initial financial aid is available through the GSWS Program. Graduate students who enroll in the program may apply for financial aid through a home department. Each year, the program hires 4-6 advanced graduate students as instructors or lecturer, and offer research grants for work on gender and sexuality.
Faculty

Dietrich School of Arts and Sciences Faculty

Gender, Sexuality, and Women's Studies Doctoral Certificate

Requirements for Doctoral Certificate

The doctoral-level certificate requires 18 credits as detailed below:

- GSWS 2252 - THEORIES OF GENDER AND SEXUALITY
- At least two other courses must be outside the candidate's home department, including at least one course with a GSWS course number
- At least three courses in one field
- No more than 1 course may be directed study

Note:

All candidates for graduate certificates must maintain a 3.00 average in courses for the certificate and submit a research paper to be read by at least one faculty member affiliated with the program. A short concept statement is also required. Students should notify the program director of their intention to graduate at the beginning of their final term. Students not in the Dietrich School must apply to graduate in A&S Graduate Studies.

Gender, Sexuality, and Women's Studies Master's Certificate (Suspended)

This program is no longer active and accepting student applications, effective Fall 2016. Students currently enrolled in the certificate will either transfer to the new minor or complete the certificate by the end of Spring 2023.

Requirements for Master's-Level Certificate

The master's-level certificate requires 12 credits as detailed below:

- GSWS 2252 - THEORIES OF GENDER AND SEXUALITY
- At least two courses in one field
- At least one other course outside the student's home department
- No more than 1 course may be directed study

Department of Geology and Environmental Science

The department offers programs that lead to the MS or PhD in Geology and Environmental Science and a Professional MS in Geographical Information Systems and Remote Sensing. The principal objective of the graduate programs is to provide a broad and strong foundation upon which students may base careers. The PhD program is designed to educate scientists for basic or applied research and teaching. Graduate research may involve specialization in geology, geochemistry, geophysics, planetary science, and environmental science.

Contact Information
Research and Facilities

Please visit www.geology.pitt.edu to find out more about research and analytical facilities available in the Department of Geology and Environmental Science

Admissions

Prospective graduate students must meet Dietrich School of Arts and Sciences requirements for entrance into graduate programs.

Financial Assistance

Financial assistance for graduate students is provided in the form of teaching and research appointments, fellowships, tuition scholarships, and loans.

Geology and Environmental Sciences, PhD

Students in MS and PhD programs have opportunities to participate in research programs encompassing many fields of current interest in geology, geochemistry, volcanology, geographic information systems (GIS), remote sensing, planetary geology, paleoclimatology, hydrology, and environmental science. In general, the research is interdisciplinary, collaborative, and employs techniques such as traditional field-based studies, advanced geochemical analytical work, sophisticated remote sensing and GIS analysis, and advanced computer modeling of natural systems. Most students enter the program with an undergraduate degree in the geosciences; however, students with degrees in other natural sciences or in engineering may be admitted in some cases. The department also offers a professional Master's degree in GIS/Remote Sensing. This non-thesis MS is patterned after the MBA degree and is designed to focus on the advanced concepts of GIS and remote sensing in order to give the student a competitive edge in the job market.

Requirements for the PhD

The minimum course requirement for the PhD degree is seventy-two (72) credits. A minimum of thirty-six (36) credits must be from formal courses and at least eighteen (18) of the credits must be taken within the Department of Geology and Environmental Science. Up to twenty-four (24) credits may be accepted from a Master of Science degree or graduate study toward the PhD from another institution. An initial evaluation, designed to explore the student's basic knowledge of the geological sciences and related fields, is required of all PhD degree candidates during their first term of residence.

A graduate student seeking the PhD degree must complete a Comprehensive Examination. The comprehensive examination should take place no later than the Fall term of the student's third year of enrollment, although students are encouraged to complete the examination as soon as possible following completion of most required coursework and after beginning dissertation research. Following successful completion of the Comprehensive Examination, each PhD student must prepare a written dissertation proposal for presentation to the Dissertation Committee (consisting of at least four department members and one outside member) at a formal Dissertation Overview meeting. During this meeting, the Dissertation Committee will critique the research plan and proposed methodology and approve or reject the dissertation topic.

Each PhD candidate must prepare a dissertation demonstrating successful completion of the research project as well as competency in the methods and techniques of scientific investigation in the field of her/his area of specialization. Each student must also submit at least one manuscript to a peer-review journal prior to graduation and present research results at both a departmental colloquium and at a meeting of a national or international scientific organization. The candidate must formally defend her/his submitted dissertation in a public meeting before the full Dissertation Committee. Complete descriptions of the most recent degree requirements are available at www.geology.pitt.edu.
Curriculum & Course Information:

**General Information:** The GIS/RS Professional-M.S. program in the Department of Geology & Planetary Science is a multidisciplinary, multi-departmental, non-research degree. Notionally, designed to be completed in two academic years (plus one summer), the program length can be changed to slightly shorter or longer depending on the student's work limitations. The required courses are centered in the Geology and Planetary Science Department and focus on GIS and RS core proficiencies. Students are also required to take at least one course in the Schools of Business, Law, and Information Sciences. A large degree of flexibility is designed into the 41 credit program so that the student can tailor his/her coursework to fit specific future career goals, personal interests, and time constraints of work/family life.

**First Semester:**

Skill Sets: GIS and Remote Sensing fundamental principles & software use; communication proficiency; exposure to geospatial professionals

- GEOL 2449 - GIS, GPS, AND COMPUTER METHODS  
- GEOL 2461 - ADVANCE REMOTE SENSING  
- COMMRC 1102: Organizational Communication

- GEOL 2015 - GEOLOGY COLLOQUIUM or  
- GEOL 2300 - PRO-M.S. SEMINAR (when offered)

Total Credits: 10

**Second Semester:**

Skill Sets: advanced GIS/RS proficiency; introduction to computer programming

- GEOL 2446 - ADVANCED GEOGRAPHICAL INFORMATION SYSTEM  
- GEOL 3946 - PYTHON SCRIPTING Python, Advanced Model Builder  
- GEOL 2460 - APPLIED REMOTE SENSING AND GPS TECHNIQUES *

Total Credits: 9

**Summer Semester:**

Skill Sets: work experience utilizing geospatial analysis tools; compilation of digital dossier; oral/written presentation experience

- GEOL 3902 - DIRECTED STUDY

Total Credits: 4

**Third Semester:**

Skill Sets: statistical data analysis; methodology of information science; introduction to business administration

- INFORMATION SCIENCE ELECTIVE: Courses **  
- BUSINESS ELECTIVE: EMBA Courses  
- FOCUSED ELECTIVE #1: Detailed Options
Total Credits: 9

Fourth Semester:

Skill Sets: advanced GIS/RS proficiency; awareness of comparative law; personalized elective expertise; data mining & database management

- LAW ELECTIVE: Detailed Options
- STATISTICS ELECTIVE: Courses **
- FOCUSED ELECTIVE #2: Detailed Options

Total Credits: 9

Note:

* if not offered, student may substitute a Focused Elective Course this semester and take GEOL 2460 in the fourth semester in place of the FOCUSED ELECTIVE #2. See possible options.

** an appropriate equivalent course may be substituted depending on the career goals of the student. See possible options.

Geology and Environmental Sciences, MS

Students in MS and PhD programs have opportunities to participate in research programs encompassing many fields of current interest in geology, geochemistry, volcanology, geographic information systems (GIS), remote sensing, planetary geology, paleoclimatology, hydrology, and environmental science. In general, the research is interdisciplinary, collaborative, and employs techniques such as traditional field-based studies, advanced geochemical analytical work, sophisticated remote sensing and GIS analysis, and advanced computer modeling of natural systems. Most students enter the program with an undergraduate degree in the geosciences; however, students with degrees in other natural sciences or in engineering may be admitted in some cases. The department also offers a professional Master's degree in GIS/Remote Sensing. This non-thesis MS is patterned after the MBA degree and is designed to focus on the advanced concepts of GIS and remote sensing in order to give the student a competitive edge in the job market.

Requirements for the Master's Degree

The minimum course requirement for the MS degree is thirty (30) credits beyond the baccalaureate. A minimum of eighteen (18) credits must be from formal courses. At least twelve (12) of these credits must be numbered 2000 or higher and must be taken within the Department of Geology and Environmental Science. An initial evaluation, designed to explore the student's basic knowledge of the geological sciences and related fields, is required of all MS degree candidates during their first term of residence. Each MS candidate prepares a thesis demonstrating successful completion of the research project as well as competency in the methods and techniques of scientific investigation in the field of her/his area of specialization. The thesis should serve as a source of publishable material, and all MS students must present research results at a meeting of a national or international scientific organization. Each MS student publicly defends her/his thesis before a Thesis Committee consisting of at least three faculty members from the Department of Geology and Environmental Science. Complete descriptions of the most recent degree requirements are available at www.geology.pitt.edu.

Department of German

*German is currently not accepting graduate applications.

The Department of German offers a PhD program that includes the MA degree as a required step toward the PhD. The program trains future scholars in German Studies and prepares them to be competitive on the national job market. It encourages interdisciplinary work and students are required to pursue a certificate or related area in programs such as Cultural Studies, Film Studies, Women Studies, European Studies, or in another related area.
Contact Information

Director of Graduate Studies: Randall Halle
412-648-2614
Fax: 412-624-6318
E-mail: rhalle@pitt.edu
http://www.german.pitt.edu/

Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of German, 1518 Cathedral of Learning, Pittsburgh, PA 15260. Phone: 412-624-5909. E-mail: grmndept@pitt.edu.

For more on each of the following programs, visit http://www.german.pitt.edu/graduate/.

Admissions

All applicants apply for the PhD program. Applicants should have a BA or MA in German or a related field. Students with training in related fields will be considered for full graduate status if their background in German language and culture is sufficient to succeed in graduate-level courses. For admission to the PhD, students completing their MA at the University of Pittsburgh must pass a preliminary evaluation in their final semester of study. For students entering with an MA from another institution, this evaluation takes place by the end of their first year of study at the University of Pittsburgh.

Applications should include:

- an Application Form;
- a Statement of Intent (Please describe your intellectual background, research interests, and academic goals);
- 3 Letters of Recommendation;
- Official Transcripts from all undergraduate and graduate study (non-US degrees must be accompanied by a notarized English translation);
- an audio recording (Non-native speakers should supply a recording in which they 1) speak freely about a topic and 2) read formally a passage from a literary or academic text);
- a Writing Sample (a research paper or selection from a thesis of about 20 pages that offers an example of the applicant's ability to conduct research and provide evidence of strong writing skills. It may be in either English or German.);
- TOEFL scores (Required of Foreign Students: minimum score of 550 [paper-based test] / 80 [internet-based test]) or the IELTS administered by the University of Cambridge, Local Examinations Syndicate with a minimum score of 6.5 (taking the academic and reading modules); and
- an Application fee of $50 (Please contact the Director of Graduate Studies if this represents a financial hardship).

Applicants are required to submit all materials for fall term admissions by January 2. Students who would like to be considered for non-teaching fellowships are encouraged to submit their applications before the New Year. Applications submitted after the deadline will be considered only if space is available. Applications are submitted online at app.applyyourself.com/?id=up-as.

Financial Assistance

Students with a high proficiency in oral German are eligible for teaching assistantships or teaching fellowships for up to five years (three years when entering with the MA). These assistantships/fellowships consist of full tuition scholarships and living expense stipends. Aid is guaranteed for the duration of the assistantship/fellowship provided the student remains in good academic standing and makes satisfactory progress toward the degree. Students may also apply for graduate tuition scholarships, Andrew Mellon Predoctoral Fellowships, the Lillian B. Lawler Scholarship/Fellowship, the Provost's Humanities Fellowships, the Fellowships in Cultural Studies, and Exchange Fellowships with the Universities of Augsburg and Bonn. A number of these fellowships are available for first-year graduate students. Interested candidates should submit their completed applications to the department by the beginning of January.

Faculty
German, PhD

Requirements for the PhD

The requirements for the PhD consist of: (1) at least 72 credits of course work, (2) a language requirement, (3) the PhD comprehensive examination, (4) the dissertation prospectus, (5) the dissertation, and (6) the completion of a certificate program or approved work in a related area. Specific details are:

- minimum 72 credits of course work, broken down as follows:
  - 30 credits from the MA
  - at least 12 seminars total (for students entering Pitt with an MA from another institution) / at least 18 seminars total (for students entering Pitt with a BA—seminars taken at the MA level count towards this requirement)
  - of these seminars, at least 6 seminars (for students with an MA from another institution) / at least 12 seminars (for students entering Pitt with a BA) should be taken in the German department.
  - at least 6 of the above seminars should be in certificate-related courses (see below).
  - at least 2/3 of the seminars taken must be taken for a letter grade;
- Language requirement: High level of oral proficiency in German (superior on OPI scale, 3 on ILR scale); reading knowledge of another language;
- Comprehensive Examination: A written examination, evaluated by a committee of 3 faculty members. Demonstrates the student's foundation in German culture from the Enlightenment to the present, as well as the student's ability to situate a specific focus within this larger context. The PhD comprehensive examination needs to be completed with an average grade of A-. The examination may be retaken only one time and needs to be retaken by the next academic term. Before completing the PhD comprehensive examination, students have to submit to their examination committee two research/seminar papers that demonstrate their scholarly potential;
- Dissertation Prospectus: 10-15 pages, submitted in the semester following the comprehensive examination. After approval by the doctoral committee, students are admitted to PhD candidacy, after which the student meets annually with the dissertation committee;
- Dissertation Defense: The dissertation must be approved by the dissertation committee after a public oral defense; and
- Completion of a certificate program or work in a related area (at least 18 credits). Approved certificates include Cultural Studies, Film Studies, and Women Studies, and West European Studies, and other related areas can be defined by the student in consultation with the Director of Graduate Studies (for example, a recently developed area of concentration is Philosophy and Literature).

German, MA

Requirements for the Master's Degree

The Master of Arts normally takes two years of study. The 30 credits include nine graduate seminars, at least six taken within the department, and a 3 credit MA project (between 35 and 50 pages long). All teaching assistants/fellows must successfully pass German 2970 as a basis for continuing financial support as a teaching assistant or fellow. In addition, all entering students must enroll in GER 2110 - INTRODUCTION TO LITERARY AND CULTURAL THEORY.

In addition to the satisfactory completion of courses, students must demonstrate a high level of proficiency in writing both in German and English by submitting for departmental approval at least one paper written in German and one paper written in English by the time of the preliminary evaluation. They must also demonstrate reading proficiency in an additional language by the end of their last term of study.

Department of Hispanic Languages and Literatures

The Department of Hispanic Languages and Literatures offers a five-year Doctor of Philosophy (PhD) with an en route Master of Arts (MA) sequence. Unlike other Spanish departments, we concentrate on Latin American Literature and Culture, including Brazil. Within that broader context, we also offer an interdisciplinary and interdepartmental PhD in film studies, and field specializations in Peninsular, Brazilian, and cultural studies.
Candidates for both the MA/PhD can also earn certificates in Latin American Studies, Cultural Studies, Film Studies, Global Studies and Gender, Sexuality, and Women Studies.

**Contact Information**

Department Chair: Jerome Branche  
Main Office: 1309 Cathedral of Learning  
412-624-5468  
Fax: 412-624-8505  
E-mail: Branch@pitt.edu  
www.hispanic.pitt.edu

For additional information regarding the department’s graduate program, or responses to questions that are not answered elsewhere, you can write to the University of Pittsburgh, Department of Hispanic Languages and Literatures, Graduate Office, 1309 Cathedral of Learning, Pittsburgh, PA 15260. You can also call 412-624-2055, or e-mail Director of Graduate Studies Prof. Gonzalo Lamana.

**Admissions**

Applicants must submit an online application, application fee of $50, transcripts of all college-level work (along with notarized translations into English, if admitted), three letters of recommendation, a statement of academic goals, and a 15-30-page writing sample (in English, Spanish, or Portuguese; if submitting the sample in English, please also send us a short sample in Spanish).

Applicants whose native language is not English and who have not already completed a degree program in a U.S. college or university are required to submit either the TOEFL (administered by the Educational Testing Service) with a minimum score of 90 (with a minimum score of 22 in each section) or the IELTS (administered by Cambridge University, Local Examinations Syndicate) with a minimum score of 6.5.

Completed applications for admission in the fall term must be received no later than January 18.

**Financial Assistance**

The department awards two types of financial assistance to incoming students: teaching assistantships (to applicants with no previous graduate studies) or teaching fellowships (to applicants who hold a MA degree), which involve teaching duties, and A&S fellowships, which do not. While any student is eligible to apply for financial assistance, departmental awards of financial aid are granted on a competitive basis to those students demonstrating the strongest academic record.

Students entering with a BA are eligible for financial aid in some combination of forms (teaching assistantship/teaching fellowship, A&S fellowship, Mellon Predoctoral Fellowship, etc.) for two years for the en route MA and three additional years for the PhD, for a maximum of five years of support. Students entering the PhD program with an MA from elsewhere are eligible for up to five years of financial aid, under certain conditions.

**Duration of the Program**

It is expected that the MA/PhD program will take five years to complete. As of Fall 2005, incoming students who are offered financial assistance in the form of teaching assistantships, teaching fellowships or non-teaching University fellowships are, assuming that satisfactory academic progress is maintained, entitled to five (5) years of support, whether or not they already have an MA degree when they enter our graduate program. However, students with an MA from another university can elect to receive only four (4) years of funding and will be entitled to transfer up to 24 credits upon successfully passing the MA Comprehensive/PhD Preliminary examinations during their fourth semester. The decision to do so must be submitted to the departmental graduate office in writing by the end of the first week of their second term in graduate program (normally first week of January).

**Faculty**
Hispanic Languages and Literatures, MA/PhD

Requirements for the PhD with En Route MA

The en route MA requires a minimum of 30 credits; 24 credits must be in substantive courses in the department, meeting major field and minor field requirements; the remaining 6 credits can consist of any combination of courses taken outside of the department (including transfer credits), a maximum of 1 Independent Reading and 1 Directed Study course.

Teaching assistants and teaching fellows new to the department are required to take a course in teaching methodology and language learning to assist them in teaching, unless a waiver is obtained.

In addition to the minimum of 30 credits, during the fourth year of full-time study (or its equivalent):

- Students must complete a long paper in the department, which is graded and serves as one part of the MA Comprehensive/PhD Preliminary examination.
- Students must also sit for the two-day MA Comprehensive/PhD Preliminary examination.

Including the MA-level work, a minimum of 72 credit hours must be attained for the PhD. Students who have received the en route MA and are working toward the PhD in the department must take a total of 48 credits of substantive courses in the department. The remaining 24 credits may consist of courses taken outside of the department, credits transferred from other institutions, directed study, or PhD comprehensive exam/overview. Up to a maximum of 12 credits of PhD dissertation research credits are permitted to count toward these 24 credits.

Students who enter the department with an MA in Spanish or a related field from another institution must complete 30 credits of substantive course work out of the 72 total credits required for the PhD. The remaining 42 credits can be distributed among credits transferred from the institution from which they earned their MA's (normally, up to 24 are allowed, in exchange for the fifth year of funding), courses taken in other departments at the University of Pittsburgh, directed study and PhD comprehensive exam/overview credits, and up to 12 credits of PhD dissertation research.

*PhD Preliminary Exam:* Students who enter the department with an MA in Spanish from another institution must pass the two-day PhD Preliminary examination in the fourth term of graduate study in the department, after which they can petition for the transfer of credits and continue on for the PhD.

*Language Requirement:* Candidates for the PhD degree must give evidence of their ability to read a third language (Portuguese, French, Italian, etc.) prior to presenting their dissertation proposal. The Department strongly encourages the learning of the Portuguese language.

*PhD Comprehensive Exam/Dissertation Overview:* After completing 60 credits of coursework and fulfilling the Portuguese requirement, students take the PhD Comprehensive exam made up of questions based on their proposal for doctoral research, which must also be defended before their proposed doctoral committee. Upon successful completion of this two-step exam process, the student is formally nominated to candidacy for the doctoral degree.

*Dissertation Defense:* The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and is open to the University community. The dissertation must be presented in English unless prior permission is obtained for it to be presented in a language other than English.

Department of History and Philosophy of Science

The graduate program in the history and philosophy of science offers MA and PhD degrees through a combination of coursework and dissertation research. The department also offers an area of concentration in classics, philosophy and ancient science. The department supports scholarship in the history and philosophy of general science and in history and philosophy of particular sciences. It has special strengths in the history and philosophy of physical, biological, social, cognitive and neurosciences, and in ancient and 17th-century science. See http://www.hps.pitt.edu/graduate/areas.php.

Contact Information
Admissions

Applicants for admission to the graduate program in history and philosophy of science will be expected to have a suitable undergraduate degree and to have some knowledge of the natural or social sciences. Applications are online. The deadline for completed applications is January 10. While the department awards both PhD and MA degrees, virtually all students are admitted into the PhD program.

Financial Assistance

Students in the PhD program are supported by fellowships or teaching assistantships/fellowships during their first five (5) years. The rates are set annually by the University. The department does not offer financial support to non-continuing MA students.

Degree Requirements

The graduate program consists of a series of seminars (approximately four to six are offered each term). These range from general surveys of the field and methods of research to specialized research seminars on selected topics in history and philosophy of science. These courses are divided into three areas:

- Area 1: Core sequence: a three-term introduction at the graduate level to history and philosophy of science
- Area 2: History of science
- Area 3: Philosophy of science

Faculty

Dietrich School of Arts and Sciences Faculty

History and Philosophy of Science, PhD

The department offers a comprehensive program of study leading to the PhD. It combines core and elective seminars with more advanced, supervised study and encourages continued study of a particular science outside the department. All periods of the history of science are supported, including ancient, and 16th century to present science; as is work in general philosophy of science (confirmation, explanation, realism, scientific change, etc.) and in the philosophy of particular sciences (biology, physics, psychology, cognitive science, social sciences, etc.).

PhD Degree Requirements:

A minimum of 72 credits with an MA in history and philosophy of science or completion of MA requirements.

1. Further distribution of studies requirements: At least nine hours at the 1000 or 2000 level, in one of the following (a maximum of two at the 1000 level, including the two for the MA):
   - Philosophy, exclusive of philosophy of science and logic
   - History, exclusive of history of science
   - A field of natural sciences, social science, or computer science
   (courses taken toward the MA degree may be counted toward the requirement for the PhD)
2. Proficiency in logic (equivalent to PHIL 1500)
3. Language requirement: Good reading knowledge of one foreign language (Latin, Greek, German, French, or approved substitute). The foreign language exam must be passed before the student completes the comprehensive requirements.
4. Satisfactory fulfillment of the comprehensive requirements, which are:
   o Core seminar examinations: A pass in end-of-term examinations in the two history of science core seminars and the philosophy of science core seminar.
   o Students must submit a research paper in the history of science and a research paper in the philosophy of science. Both must pass at the PhD level.
5. Submission of a significant and acceptable dissertation on a topic in history and philosophy of science.
6. All students must acquire some supervised teaching experience during their tenure at the University.

These requirements are specific departmental requirements, in addition to the general requirements for the MA and PhD degrees laid down by the Graduate Dietrich School of Arts and Sciences.

**History and Philosophy of Science, MA**

**MA Degree Requirements**

A minimum 30 credit hours are required for the degree distributed as follows:

**M.A. degree requirements:**

A. Distribution-of-Studies Requirement:

1. Nine hours from Area 1 (Core Seminars). MA students must pass the end-of-term examination in all three core seminars. (See Section III E.1.)

2. Fifteen hours from Areas 2 and 3, with at least six hours in each area.


B. Language Requirement: Good reading knowledge of either French, German, Latin, Greek, or approved substitute language. (Language acquisition courses cannot count toward the degree).

C. Research Paper Requirement: Students must submit a research paper in the history of science and a research paper in the philosophy of science. Evaluations of papers will be limited to a master's pass-fail. A master's pass on both papers is required for the M.A. degree.

D. Course Credit Requirement: A minimum of 30 credit hours. No more than two (non-HPS) 1000-level courses (6 hours total) may count towards the M.A. degree. (No pre-1000 level courses can be used to satisfy the degree requirements. No HPS courses at the 1000-level can count.)

**Department of History of Art and Architecture**

The University of Pittsburgh's PhD program in History of Art and Architecture offers close mentoring from internationally renowned scholars for students admitted through a highly selective admissions process. We fully fund all our doctoral students with generous multiyear packages of financial support, including fellowships and teaching assistantships. Our students also have an excellent record in competing for prestigious external fellowships such as the Fulbright, and in job placement after graduation.

Application is directly to the PhD program. Even though many students earn an MA here before proceeding to the PhD, ours is essentially a PhD program and we do not admit students for a terminal MA. Students who already hold an MA in History of Art and Architecture before matriculating at the University of Pittsburgh may receive credit toward the PhD. We encourage all prospective students to select a potential advisor based on that professor's expertise in a given subject, and to contact that faculty member in their area of interest before applying.

Our program possesses an innovative and exciting structure, in which faculty members and graduate students participate in research constellations. These constellations organize our department not around subject matter, but rather around commonly held interpretative approaches and lines of inquiry ("Visual Knowledge," "Agency," "Identity," etc.). While our students acquire specialized knowledge of a particular art-historical subfield,
they also produce conceptually ambitious and methodologically innovative research for their PhD. We strongly encourage students to explore our web site (www.haa.pitt.edu) for more information on faculty members, graduate program requirements, and the application process.

Contact Information

Linda Hicks
Senior Administrator
104 Frick Fine Arts Building
Pittsburgh, PA 15260
Phone: 412-648-2421
E-mail: lih@pitt.edu

Please consult our department website for further information on our graduate program (http://www.haa.pitt.edu/graduate) or email Linda Hicks at lih@pitt.edu

Admissions

Applicants for admission must submit: an online application, official transcripts of all college-level work, three letters of recommendation, a statement of purpose outlining the applicant's intellectual and professional goals, a writing sample that demonstrates the applicant's scholarly ability, a completed foreign language questionnaire, and GRE scores. International students whose first language is not English must also submit TOEFL scores administered by the Educational Testing Service with a minimum score of 90 on the internet-based test and a minimum score of 22 in each section.

Strong applicants will have completed an undergraduate major in a discipline in the humanities with at least a minor (12 credits / 4 advanced-level courses) in history of art and architecture. Successful applicants will possess strong language skills in the area(s) that they wish to pursue. For example, students wishing to pursue degree work in East Asian art and architecture must have the equivalent of three years of college-level instruction in Chinese or Japanese before entering the program. Students applying to study topics related to Europe and/or the Americas should likewise have relevant language competency (completion through the intermediate college level with a B+ or better). Students in coursework also have opportunities to acquire additional language skills both on campus and beyond. Our program embraces global perspectives on art and architecture, and we welcome applicants who will contribute diverse language skills that are essential to this mission.

The deadline for admissions is December 15. Applicants are notified of their status in the following spring, and admitted students enter the program in the fall.

Financial Assistance

The department offers five-year aid packages to all of its PhD students. These packages consist of full tuition scholarships and living expense stipends. Aid is guaranteed for the duration of the package provided the student remains in good academic standing and makes satisfactory progress toward the degree. Aid takes the form of teaching and research assistantships, including a variety of positions at the University Art Gallery (https://uag.pitt.edu/), the Visual Media Workshop (http://www.haa.pitt.edu/visual-media-workshop), and institutions connected to the Collecting Knowledge Pittsburgh (http://www.haa.pitt.edu/graduate/constellations) initiative. All incoming students receive a fellowship free of teaching and other employment duties for their first year, and are expected to compete for internal and external fellowships as they continue in the program. The department is committed to supporting all students regardless of citizenship status or country of origin. For more financial aid information, please consult our website: http://www.haa.pitt.edu/graduate/financial-aid.

Faculty

Dietrich School of Arts and Sciences Faculty

Film Studies - History of Art and Architecture Concentration, PhD
Degree Requirements

Incoming students are admitted directly into the doctoral program; the MA degree is granted in the second year as a step toward the doctorate. All graduate coursework done before the MA is granted counts toward PhD requirements. Students who have been admitted into the Film Studies PhD with a concentration in History of Art and Architecture must satisfy degree requirements for both programs (for more information please visit the Film Studies website). All graduate coursework done before the MA is granted counts toward PhD requirements. Doctoral students must complete 72 credit hours, of which 30 must be completed in the first two years for the MA, or 24 may be transferred from MA programs at other institutions. At the PhD level, HAA 2005 - METHODS RESEARCH AND SCHOLARSHIP, HAA 2007 - HISTORIOGRAPHY, ENGFLM 2451 - FILM HISTORY/THEORY, ENGFLM 2452 - FILM HISTORY/THEORY 2, FILMG 2905 - PROSEMINAR IN FILM AND MEDIA STUDIES, and either four or seven graduate seminars, depending on student's MA status are required. It is expected that the student will take a substantial proportion of these seminars either with their advisor or within HAA to advance their research program. In addition, students must also complete the HAA seminar in pedagogy theory. All other required credits for the PhD may be fulfilled through additional coursework or independent studies directed toward comprehensive exam and prospectus preparation, and dissertation research. The final requirement for the degree is the successful defense of the dissertation.

Course work

The PhD requires a total of 72 credits.

12 graduate-level classroom courses (for students without an MA)/nine graduate-level classroom courses (for students with an MA) are part of this requirement. Normally, most of these are completed in the first two years. The normal course load is three courses per semester (nine credits). The courses must include:

- HAA 2005 - METHODS RESEARCH AND SCHOLARSHIP and HAA 2007 - HISTORIOGRAPHY (Methods and Historiography are alternated every other fall semester and must be taken in the student's first and second year).
- ENGFLM 2451 - FILM HISTORY/THEORY and ENGFLM 2452 - FILM HISTORY/THEORY 2 (to be taken in any order).
- FILMG 2905 - PROSEMINAR IN FILM AND MEDIA STUDIES.
- Four to seven graduate seminars (depending on MA status), to be determined in consultation with advisor and HAA Director of Graduate Studies.
- HAA 2970 - TEACHING OF ART HISTORY is a required course for all students, however, it does not count toward the required graduate seminars.

The remaining credits may be amassed through various independent study options and additional courses if necessary.

Note: If a student enters the PhD with an MA from an outside institution, some of these requirements may be bypassed. See the Graduate Handbook, Section 2, for more details.

The departmental faculty teach across many areas. In line with the department's newly organized research constellations, students are expected to take courses on many different historical and geographical topics, while at the same time acquiring in-depth knowledge and expertise in one of these. In consultation with the HAA Director of Graduate Studies and the student's individual advisor, students should select their courses with these two requirements in mind.

Languages

Students are required to have reading knowledge of two languages (beyond English) relevant to their particular research area. The relevance of these languages to the student's course of study will be determined in consultation with the academic advisor. All students must be certified in two research languages; only native speakers will be exempted. Prior to admission, students specializing in East Asian film must have at least three years/six semesters of college-level Japanese or Chinese, with a grade of B+ or better, or equivalent knowledge. Similarly, students specializing in other areas must have at least two years/four semesters of college-level instruction, with a grade of B+ or better, or equivalent knowledge of a research language prior to admission.

Certification in research languages may be achieved in the following ways:

- through passage of a departmentally administered exam. Students who wish to take the department exam should register with the Graduate Secretary by the end of the first week of the term; the Secretary will schedule and administer the exam. The Exam Coordinator will choose two
passages in the language to be examined, evaluate the exam, and communicate the results of the evaluation to the student and Graduate Secretary, who will record the results on the Student Record and Tracking Sheet. Students will have a choice of two passages, each about 500 words in length, but are to pick only one text to translate. They may use a dictionary and will have 90 minutes to complete their translation. The translation must communicate an accurate sense of the text content and knowledge of art historical vocabulary.

- completion through the intermediate level (typically the third semester) of a language, taken at the University of Pittsburgh during the period of the student's graduate study, with a grade of B+ or better.
- completion of two graduate level reading courses in a foreign language, taken at the University of Pittsburgh, with a grade of B+ or better.
- completion of an accredited language immersion program, in the United States or abroad.
- certification of language qualification attained at another accredited graduate degree program.

Graduate students will establish a schedule for completion and certification of the language requirement in consultation with their academic advisors.

All students are strongly encouraged to be certified in both languages as soon as possible. Pre-MA students must be certified in at least one of the two languages required for the PhD by the fourth semester review if they wish to continue in the PhD program. No student will become ABD without completing language requirements.

The MA Paper and Degree

In the case of students who did not earn an MA degree in Film and Media Studies at another institution prior to matriculating in the PhD program, the MA is typically granted at the end of the second year of study as a required step toward the PhD. The MA requires:

- a total of 30 graduate-level credits, including the courses enumerated above.
- at least one foreign language certified.
- an MA paper passed by majority vote of the faculty.

The MA paper is 25-to 30-pages with an argument based on original research. The paper functions as a demonstration of the student's ability to carry out research and writing of PhD caliber. Ideally, it will be based on a seminar paper written in the first year, which is then reworked and polished over the following summer and fall. In some cases, with the approval of a faculty advisor, the student may embark on a new paper not already written in a seminar.

Fourth Semester Review

In their fourth semester, all students (with the exception of those who entered with an MA) undergo a review for continuation in the PhD program. Students submit a dossier including:

- their completed MA paper.
- all faculty evaluations of the student's course work to date.
- a one-page form that explains their proposed dissertation field and lists the course requirements and relevant foreign languages they have passed. This last document must be approved and signed by the student's advisor.

The faculty then reviews the dossier to make sure that the student's work demonstrates the ability to carry out a dissertation successfully. More specifically, the faculty looks for evidence of ability to carry out original research in the student's field, to master secondary literature, to frame an original argument, and to write lucidly.

If the faculty makes a positive determination, the MA is granted and the student is officially approved to continue in the PhD program. All graduate coursework done to this date counts toward the PhD degree. A dissertation committee is named, consisting of the student's advisor and two other faculty members drawn from HAA and/or Film and Media Studies at Pitt.

If the faculty determines that the student's work does not merit continuation in the PhD program, the student may be granted a terminal MA degree providing they have met the MA requirements and the faculty by majority vote deems the MA paper creditable.

Preliminary Exam
In the fifth semester, the first of the student's annual PhD committee meetings is held. The student presents a one-page description of the dissertation topic, and the student and committee together decide on comprehensive exam areas and procedures. Once the faculty as a whole reviews and approves the dissertation topic and exam areas, the "prelim" is passed.

Comprehensive Exams

Doctoral students normally take their comprehensive exams in the third or fourth year, (or second year if they are entering with an MA) after they have completed their coursework requirements. While a committee member from outside the department is not required at this stage, it is recommended to have an outside member participate both in the formulation of the exam contents and in the exam itself. The comprehensive exams have two broad goals. The first goal is to test whether the student has sufficient knowledge of the field to carry out the dissertation. The student should be able to articulate "the shape of the field" and should be conversant with current trends in scholarship. The second goal is to test whether the student has sufficient knowledge to teach one or more broadly defined areas.

Teaching Portfolio

Graduate Students must produce teaching portfolios to advance to candidacy. They are encouraged to do so in the context of the required seminar, HAA 2970 Pedagogy Theory. Thereafter, they should include the teaching portfolio with the materials they submit to their PhD committee for their annual meetings. PhD committees are encouraged to give further feedback to the student as appropriate, especially as the student's thinking about pedagogy evolves, as the student readies themselves for the job market, et cetera.

Dissertation

The dissertation is a book-length research project designed to make an original scholarly contribution to the student's field. Ideally, students begin to focus their dissertation topic early in their graduate career, within the first two years. The MA paper can be a piece of the final dissertation. As soon as possible, students should design their curriculum to enrich and advance their dissertation project.

After a successful fourth semester review, a dissertation committee of three faculty (chaired by the student's advisor) guides and mentors the student. Upon passing the comprehensive exams, the student prepares a dissertation prospectus that must be approved by the dissertation committee, including a fourth external committee member. Once the student completes the dissertation itself, the student must pass a dissertation defense, normally a two-hour conversation with the committee (including outside faculty member).

Time to Degree

The PhD degree is designed to take five to seven years to complete, depending on the student's field. Actual time to degree varies depending on many factors, including the language preparation and/or specialized skills needed to conduct dissertation research. Students in East Asian art or architecture, for example, may need to learn classical as well as modern languages, and to learn archaeological methods.

Note: For more details on degree requirements, the student-advisor relationship, and other related matters, please see the Graduate Handbook.  

Graduate students will establish a schedule for completion and certification of the language requirement in consultation with their academic advisors. All students are strongly encouraged to be certified in both languages as soon as possible. Pre-MA students must be certified in at least one of the two languages required for the PhD by the fourth semester review if they wish to continue in the PhD program. No student will become ABD without completing language requirements.

History of Art and Architecture, PhD

Degree Requirements

Incoming students are admitted directly into the doctoral program. For students entering without a master's degree, the MA is earned in the second year as a step toward the doctorate. Students entering with an MA in history of art and architecture from another institution may have this requirement waived pending approval from their advisor and the Director of Graduate Studies.
All graduate coursework done before the MA counts toward PhD requirements. Doctoral students must complete 72 credit hours, of which 30 must be completed in the first two years for the MA. Students entering with an MA from another institution may transfer 24 credits, but are still required to complete nine graduate-level courses during their first two years. All graduate students entering with an MA must complete HAA 2005 - METHODS RESEARCH AND SCHOLARSHIP , HAA 2007 - HISTORIOGRAPHY , four graduate seminars in HAA, plus three elective courses in any department, for a total of nine courses. In addition, students must also complete the seminar in pedagogy theory. Graduate students without an MA must complete three additional courses. It is expected that students will take seminars that advance their research program. After the first 30 credits have been completed, the remaining required credits for the PhD may be fulfilled through additional coursework or independent studies directed toward comprehensive exam and prospectus preparation, and dissertation research. The final requirement for the degree is the successful defense of the dissertation.

Course work

The PhD requires a total of 72 credits.

12 graduate-level classroom courses (for students without an MA)/nine graduate-level classroom courses (for students with an MA) are part of this requirement. Normally, most of these are completed in the first two years. The normal course load is three courses per semester (nine credits). The courses must include:

- HAA 2005 - METHODS RESEARCH AND SCHOLARSHIP and HAA 2007 - HISTORIOGRAPHY (Methods and Historiography are alternated every other fall semester and must be taken in the student's first and second year.)
- Four or five HAA seminars (depending on MA status)
- Three or five elective courses (depending on MA status), in HAA or in other departments
- HAA 2970 - TEACHING OF ART HISTORY is a required course for all students, however, it does not count toward the required graduate seminars

The remaining credits may be amassed through various independent study options and additional courses if necessary.

Note: If a student enters the PhD with an MA from an outside institution, some of these requirements may be bypassed. See the Graduate Handbook, Section 2, for more details.

The departmental faculty teach across many areas. In line with the department's newly organized research constellations, students are expected to take courses on many different historical and geographical topics, while at the same time acquiring in-depth knowledge and expertise in one of these. In consultation with the Director of Graduate Studies and the student's individual advisor, students should select their courses with these two requirements in mind.

Language Requirement

Students are required to have reading knowledge of two languages (beyond English) relevant to their particular research area. The relevance of these languages to the student's course of study will be determined in consultation with the academic advisor. All students must be certified in two research languages; only native speakers will be exempted. Prior to admission, students specializing in East Asian art and/or architecture must have at least three years/six semesters of college-level Japanese or Chinese, with a grade of B+ or better, or equivalent knowledge. Similarly, students specializing in other areas must have at least two years/four semesters of college-level instruction, with a grade of B+ or better, or equivalent knowledge of a research language prior to admission.

Certification in research languages may be achieved in the following ways:

- through passage of a departmentally administered exam. Students who wish to take the department exam should register with the Graduate Secretary by the end of the first week of the term; the Secretary will schedule and administer the exam. The Exam Coordinator will choose two passages in the language to be examined, evaluate the exam, and communicate the results of the evaluation to the student and Graduate Secretary, who will record the results on the Student Record and Tracking Sheet. Students will have a choice of two passages, each about 500 words in length,
but are to pick only one text to translate. They may use a dictionary and will have 90 minutes to complete their translation. The translation must communicate an accurate sense of the text content and knowledge of art historical vocabulary.

- completion through the intermediate level (typically the third semester) of a language, taken at the University of Pittsburgh during the period of the student's graduate study, with a grade of B+ or better.
- completion of two graduate level reading courses in a foreign language, taken at the University of Pittsburgh, with a grade of B+ or better.
- completion of an accredited language immersion program, in the United States or abroad.
- certification of language qualification attained at another accredited graduate degree program.

Graduate students will establish a schedule for completion and certification of the language requirement in consultation with their academic advisors. All students are strongly encouraged to be certified in both languages as soon as possible. Pre-MA students must be certified in at least one of the two languages required for the PhD by the fourth semester review if they wish to continue in the PhD program. No student will become ABD without completing language requirements.

The MA Paper and Degree

In the case of students who did not earn an MA degree in history of art and architecture at another institution prior to matriculating in the PhD program, the MA is typically granted at the end of the second year of study as a required step toward the PhD. The MA requires:

- a total of 30 graduate-level credits, including the courses enumerated above.
- at least one foreign language certified.
- an MA paper passed by majority vote of the faculty.

The MA paper is 25 to 30 pages with an argument based on original research. The paper functions as a demonstration of the student's ability to carry out research and writing of PhD caliber. Ideally, it will be based on a seminar paper written in the first year, which is then reworked and polished over the following summer and fall. In some cases, with the approval of a faculty advisor, the student may embark on a new paper not already written in a seminar.

Fourth Semester Review

In their fourth semester, all students (with the exception of those who entered with an MA) undergo a review for continuation in the PhD program. Students submit a dossier including:

- their completed MA paper.
- all faculty evaluations of the student's course work to date.
- a one-page form that explains their proposed dissertation field and lists the course requirements and relevant foreign languages they have passed. This last document must be approved and signed by the student's advisor.

The faculty then reviews the dossier to make sure that the student's work demonstrates the ability to carry out a dissertation successfully. More specifically, the faculty looks for evidence of ability to carry out original research in the student's field, to master secondary literature, to frame an original argument, and to write lucidly.

If the faculty makes a positive determination, the MA is granted and the student is officially approved to continue in the PhD program. All graduate coursework done to this date counts toward the PhD degree. A dissertation committee is named, consisting of the student's advisor and two other faculty members drawn from HAA.

If the faculty determines that the student's work does not merit continuation in the PhD program, the student may be granted a terminal MA degree providing they have met the MA requirements and the faculty by majority vote deems the MA paper creditable.

Preliminary Exam

In the fifth semester, the first of the student's annual PhD committee meetings is held. The student presents a one-page description of the dissertation topic, and the student and committee together decide on comprehensive exam areas and procedures. Once the committee as a whole reviews and approves the dissertation topic and exam areas, the "prelim" is passed.

Comprehensive Exams
Doctoral students normally take their comprehensive exams in the third or fourth year, (or second year if they are entering with an MA) after they have completed their coursework requirements. While a committee member from outside the department is not required at this stage, it is recommended to have an outside member participate both in the formulation of the exam contents and in the exam itself. The comprehensive exams have two broad goals. The first goal is to test whether the student has sufficient knowledge of the field to carry out the dissertation. The student should be able to articulate "the shape of the field" and should be conversant with current trends in scholarship. The second goal is to test whether the student has sufficient knowledge to teach one or more broadly defined areas.

Dissertation

The dissertation is a book-length research project designed to make an original scholarly contribution to the student's field. Ideally, students begin to focus their dissertation topic early in their graduate career, within the first two years. The MA paper can be a piece of the final dissertation. As soon as possible, students should design their curriculum to enrich and advance their dissertation project.

After a successful fourth semester review, a dissertation committee of three HAA faculty (chaired by the student's advisor) guides and mentors the student. Upon passing the comprehensive exams, the student prepares a dissertation prospectus that must be approved by a dissertation committee consisting of four members (including one faculty member from outside HAA). Once the student completes writing the dissertation, they must pass a defense, normally a two-hour conversation with the committee (including the outside faculty member).

Time to degree

The PhD degree is designed to take five to seven years to complete, depending on the student's field. Actual time to degree varies depending on many factors, including the language preparation and/or specialized skills needed to conduct dissertation research. Students in East Asian art or architecture, for example, may need to learn classical as well as modern languages, and to learn archaeological methods.

Note: For more details on degree requirements, the student-advisor relationship, and other related matters, please see the Graduate Handbook.

Teaching Portfolio

Graduate students must produce teaching portfolios to advance to candidacy. They will do so in the context of the required seminar, HAA 2970 - TEACHING OF ART HISTORY. Thereafter, they should include the teaching portfolio with the materials they send to their PhD committee for their annual meetings. PhD committees are encouraged to give further feedback to the student as appropriate, especially as the student's thinking about pedagogy evolves, as the student readies themselves for the job market, et cetera.

History of Art and Architecture, MA (for admitted PhD students only)

General requirements

General Requirements
Students who enter the PhD program without a Master's degree in hand are expected to complete an MA as part of their progress toward a PhD. Students who enter the program with an MA from another university may have this requirement waived, pending approval from their advisor and the Director of Graduate Studies.

Master's degree students must successfully complete 36 credit hours (12 courses). 21 of these credits (seven courses) must be seminars in art history, two of which must be the core courses, HAA 2005 Methods and HAA 2007 Historiography. Another 15 credits (five elective courses) may be completed in any department, and at least three credits (one course) must be fulfilled in a cognate discipline outside HAA. The remaining credits may be used to fulfill MA paper and PhD requirements in a combination of independent studies (independent study courses do not count towards the credits required for the MA degree) and relevant classes. Six credits (two courses) may be transferred from another approved graduate program.

Language Requirement
Certified competence in one language (beyond English) relevant to the student's program of research is required for the awarding of the MA degree.
Students must demonstrate such competence by passing a department exam or by providing other verification within the first term of residence. Certified competence in two research languages is required for the PhD and must be demonstrated before the student is admitted to candidacy.

The MA Paper
The final requirement for the MA degree is an original research paper, typically 25 to 30 pages in length, produced under the supervision of two faculty readers and deemed satisfactory by a majority vote of the full faculty in residence. The MA paper is usually a substantially revised version of a paper produced in a research seminar. It must be submitted no later than November 1 or January 15 of the term in which the degree is expected.

Department of History
The Department of History, which offers the degree Doctor of Philosophy (PhD), is committed to training area specialists with a global perspective. Our students learn how to research, interpret and teach the histories and historiographies of particular places from comparative, cross-cultural, transnational and global perspectives. The graduate program provides training in historical research and teaching to students who wish to find careers in colleges, universities, and other settings where the skills of the historian can be used. To advance this purpose, the department encourages a climate of intellectual inquiry and active research that embraces graduate students and faculty members alike. The hallmark of the program is the high measure of independence and flexibility it allows students in shaping a curriculum that meets their needs, within the limits of faculty expertise and available resources.

Contact Information
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Graduate Administrator: Patty Landon (pal14@pitt.edu)
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www.history.pitt.edu

Admissions
Admission to the graduate program in history is highly competitive. Candidates must present a career statement, a sample of their written work on a historical topic, undergraduate and/or graduate transcripts and two letters of recommendation. Test of English as Foreign Language scores are required of all applicants whose primary language is not English. Graduate Record Examination (GRE) scores are recommended, especially for applicants seeking to be nominated for university-wide fellowships. Students interested in the graduate program should contact the graduate administrator at the University of Pittsburgh, Department of History, Pittsburgh, PA 15260; by e-mail: pal14@pitt.edu Patty Landon; or apply online at app.applyyourself.com/?id=up-as.

Financial Assistance
The department offers funding to most of its graduate students through a mix of teaching assistantships, teaching fellowships, departmental fellowships, and research assistantships. If students are admitted to program with funding, the University waives tuition fees and offers health benefits or provisions for benefits. While in the program, students have to opportunity to apply for a variety of non-teaching fellowships provided by the University of Pittsburgh or national and international organizations. In addition to the teaching and non-teaching fellowships, the History Department offers summer research funding to graduate students on a competitive basis, which allows students to conduct archival research or language training within the US or abroad. The funding the University of Pittsburgh provides to graduate students is competitive and covers the costs of a graduate student living in Pittsburgh.
Students specializing in East Asian, Latin American, Russian and East European, and Western European history are also eligible to apply for fellowships and research grants offered by the University of Pittsburgh's University Center for International Studies (UCIS).

**Degree Requirements**

The minimal requirements for the degrees established by the Graduate Faculty of the University and by Dietrich School of Arts & Sciences A&S Graduate Studies, as described elsewhere in this bulletin, should be read in conjunction with the specific departmental requirements for these degrees in the following sections.

**History, PhD**

The graduate program in history is committed to training area specialists with a global perspective. Our students learn how to research, interpret and teach the histories and historiographies of particular places from comparative, cross-cultural, transnational and global perspectives. Close cooperation with the interdisciplinary programs in Latin American Studies, Russian and East European Studies, West European Studies, and Asian Studies, coordinated under the University Center for International Studies, strengthen the international orientation of the program, with graduate students from Europe, Asia, and Latin America joining American students pursuing a PhD degrees.

**Requirements for the PhD**

Prerequisite for admission is a Master of Arts in History or equivalent preparation (plus approval, for those previously enrolled in the department). Students entering the program with an MA from another institution must pass a preliminary examination at the end of the first year in the program. They must complete 9 credits in order to sit for the one-hour oral examination.

The coursework and comprehensive exam portion of the PhD program should take no more than one years beyond the MA. Required doctoral coursework includes successful completion post-MA of two graduate courses in History and the completion of the department pedagogy program.

**Breadth Requirement:** Ph.D. students entering the program with a B.A. must fulfill the Breadth Requirement by the end of their fifth year. This requirement is intended to help students think more broadly about their dissertation and intellectual trajectory as well as future career paths. It may be fulfilled as follows: a) a second foreign language; b) two skill-based courses agreed-upon with their advisor including but not limited to statistics, digital humanities, oral history/ethnography, and computer programing; c) two courses agreed-upon with their advisor that will permit students to enhance their knowledge in an interdisciplinary area including Gender, Sexuality & Women's Studies, Cultural Studies, or an area of the student's design; or d) in consultation with the DGS and their advisor, 6 credit hours or the equivalent accrued from internships and/or courses designed to enhance students' ability to utilize their professional skills in diverse career environments.

**Comprehensive Exam:**

For students entering with a BA, the comprehensive exam needs to take place by February 1 of their third year. At the end of their first year, students must meet with their advisor and the DGS to: a) constitute a comps committee consisting of three members, all of whom need to have Graduate Faculty status; and b) identify any coursework completed in their first year that could be included in the comps portfolio. At the end of their second year, students and their full comps committee will agree upon the contents of the comps portfolio that will form the basis of the oral exam.

Students will work with faculty members who are members of the Graduate Faculty to develop expertise in: a regional field (Asia, Europe, Latin America, or United States); and a transregional or global field defined by the student in consultation with their advisor(s). Students may fulfill this requirement in one of the following ways: a) a field in world or global history; b) a field in a transregional history such as Atlantic history or Eurasian history; or c) a thematic field with transregional scope such as gender or empire.

The portfolio will consist of: a) two to three historiographic essays in the regional field as well as a bibliography of 40-50 books; b) two to three historiographic essays in the transregional or global field as well as a bibliography of 30-40 books; and c) a teachable undergraduate course proposal that demonstrates students' ability to translate their knowledge of the historiography and recent research trends in a given field into the composition of an undergraduate course.

Students complete the comprehensive exam through an oral examination, which will take place no later than February 1 of their third year. The oral examination will be a maximum of two hours in duration, and should focus on the portfolio. Students should be able to discuss the essays, the bibliographies, and the course proposal.
Dissertation overview: After having selected a suitable dissertation topic in consultation with their advisor, students will present a written overview to their Ph.D. committee describing the purpose, scope, and method of the proposed study and the sources upon which it will be based. A PhD committee is composed of at least four members, all of whom must be members of the Graduate Faculty. There must be three graduate faculty members from the candidate's department and at least one graduate faculty member external to the candidate's department. With the acceptance of this prospectus at the overview examination and the approval of the assistant dean of graduate studies, the student is formally admitted to candidacy for the PhD.

Dissertation defense: The doctoral thesis, directed and evaluated by the student's Ph.D. committee, is expected to demonstrate the student's capacity to carry out independent, original research. Only if the dissertation is judged to demonstrate such competence, after formal defense in a final oral examination, does the department recommend the awarding of a degree.

For further details regarding the graduate program in history and the specific exam requirements, please see the latest version of the Handbook of the Graduate Program in History, which can be downloaded from the History Department Website.

History, MA

The graduate program in history is committed to training area specialists with a global perspective. Our students learn how to research, interpret and teach the histories and historiographies of particular places from comparative, cross-cultural, transnational and global perspectives. Close cooperation with the interdisciplinary programs in Latin American Studies, Russian and East European Studies, West European Studies, and Asian Studies, coordinated under the University Center for International Studies, strengthen the international orientation of the program, with graduate students from Europe, Asia, and Latin America joining American students pursuing a PhD degrees.

Requirements for the Master's Degree

While the History Department does not offer a terminal Master's Degree, for students admitted with funding, graduate students get the Master's Degree while working towards their PhD. The requirements for being awarded the Master of Arts in history should be met within two years. 30 credits are required for the degree. Of these 30 credits, only 6 may be in Arts and Sciences courses numbered 1002 through 1999 series- these are undergraduate courses-subject to the approval of the student's advisor and the Director of Graduate Studies, but students are encouraged to take as much of their work as possible at the graduate seminar level. Students must take six credits in seminars or directed studies in transregional or global fields (the six credits may be in different transregional/global fields); and six credits in seminars or directed studies in a regional field (Asia, Europe, Latin America, or the United States). In addition, students must take three credits of graduate-level coursework outside of the discipline of history.

First Research Tool: The Master's degree requires the completion of the first research tool, which consists of reading proficiency in one foreign language. Students select, in consultation with their advisor, the language most useful to their specialization. Students are urged to complete language preparation before entering graduate school, not only to lighten their workload, but also because some seminars require the use of a second language.

Research paper: To complete their MA degree, students write a research paper of approximately 10,000 words, which is kept as part of their permanent record and is considered equivalent to a master's thesis. This paper, normally developed must be based on original research and should be potentially publishable.

MA committee: In consultation with their advisor, students create a three-person committee for their M.A. examination, usually chaired by their advisor. At least two of the committee members must be members of the Graduate Faculty. Before students can sit for their M.A. exam, the chair of the M.A. committee must approve the final version of the research paper.

MA examination and admission to the Ph.D. program: The M.A. examination will be a one-hour oral examination. Questions will be based on the M.A. research paper. At the conclusion of the examination, the committee will inform the student of its decision as to whether or not it recommends that the student be awarded the M.A. degree. If the student has expressed a desire to enter the Ph.D. program, the committee will also make a determination as to whether or not it recommends admission into the Ph.D. program. At the earliest opportunity, the M.A. committee's evaluation of the examination must be reported to the department, which must approve admission into the Ph.D. program.

Department of Linguistics
The Department of Linguistics offers the degrees of Master of Arts and Doctor of Philosophy in both linguistics and Hispanic linguistics, with areas of concentration in applied linguistics and sociolinguistics. The MA Program requires a minimum of 10 courses (30 credits). The Dietrich School of Arts and Sciences requires a minimum of 72 credits beyond the baccalaureate for a PhD degree.

Master of Arts in Linguistics  
Doctor of Philosophy in Linguistics  
Master of Arts in Hispanic Linguistics  
Doctor of Philosophy in Hispanic Linguistics  
Doctor of Philosophy in Sociolinguistics

Students may fulfill requirements for the TESOL Certificate in conjunction with their graduate study or as a stand-alone post baccalaureate certificate.

**Contact Information**

Department Chair: Scott Kiesling  
Main Office: 2816 Cathedral of Learning  
412-624-5900  
Fax: 412-624-6130  
E-mail: lingpitt@pitt.edu  
www.linguistics.pitt.edu

The best and most current information is at the department website. Potential applicants are encouraged to thoroughly explore this site for further information. See especially the Graduate Handbook.

Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Linguistics, Graduate Administrator, Maggie Bupp, 1617 CL, Pittsburgh, PA 15260. Email: maggiebupp@pitt.edu Phone: 412-624-6568. Fax: 412-624-8814.

In addition to graduate and undergraduate education in the field of linguistics, the Department of Linguistics is responsible for the following programs and centers:

- Less Commonly Taught Languages Center  
- Robert Henderson Language Media Center  
- TESOL Certificate Program  
- English Language Institute (non-credit)

**Admissions**

In order to be admitted to graduate standing in linguistics, students must meet the admission requirements of the Dietrich School of Arts and Sciences and have at least two years, or the equivalent, of university-level study of a second language. The Graduate Record Examination is required for all applicants. PhD applicants must also submit samples of written work in linguistics. To be considered for financial aid, complete applications should be received by December 15. Applicants for Hispanic linguistics must be fluent in Spanish in addition to the above admissions requirements (determined by interview following review of other application materials).

**Financial Assistance**

Funding is mainly through teaching assistantships, while occasionally there are research assistantships through grant funding. There are two to five such teaching assistantships each year, usually involving some sort of research work and sometimes teaching or faculty-teaching support. Some of the aid offered by the department is in the form of teaching assistantships in the Department of Linguistics in the English Language Institute, which is offered for both MA and PhD students. There are about two new positions per year. For all assistantships, applicants whose native language is not English may be eligible for two or three of these positions. For all assistantships, applicants are ranked mainly on the basis of their academic
qualifications, but relevant teaching experience or research can help. Students in the Hispanic linguistics program teaching Spanish language courses must be enrolled in Methodology for Teaching Spanish (SPAN 2307). There are a total of 6 funded positions in Applied Hispanic linguistics.

Besides assistantships, there are a limited number of predoctoral fellowships from the Andrew Mellon Foundation and Provost's Humanities Fellowship program, for which PhD applicants in linguistics are eligible. Applicants should realize that these are very prestigious fellowships, granted on the basis of a University-wide competition. Promising applicants are invited to apply based on their admissions materials. The application deadline is February 1. For more information on these fellowships, see Fellowships and Traineeships in the A&S section of this bulletin.

TESOL

TESOL is an acronym for Teachers of English to Speakers of Other Languages. Professionals in TESOL may be involved in teaching, administration, curriculum development, materials development, assessment, research, and advocacy. They work in a variety of contexts including various age levels, countries, and specialist areas such as English for specific purposes. This TESOL certificate program includes the study of: linguistics at an introductory level, structures of English, theories and practices of teaching second language, second language acquisition, materials and curriculum development, and assessment.

The Department of Linguistics offers two certificates in the Teaching of English to Speakers of Other Languages (TESOL).

- Higher Education Course
- ESL Program Specialist Course

Faculty

http://www.linguistics.pitt.edu/people/faculty/index.php

Linguistics, MA/PhD

The PhD program (also referred to as the MA/PhD program) is a combined program designed for students entering with the intention of earning a PhD. The program consists of core coursework, requirements for specific Areas of Concentration (ARCOs), preliminary exams, comprehensive exams, and dissertation work. The ARCOs available are:

- Applied Linguistics
- Hispanic Linguistics
- Sociolinguistics

Students in the PhD program must choose one of the above ARCOs.

Required Core Courses for the PhD (all concentrations)

The following courses are required of all students in the PhD program. Students entering with an MA degree from another institution may petition to have coursework from that MA degree apply to the PhD degree at Pitt (see also the Preliminary exam requirement for students with an existing MA).

Courses normally required to be taken in the first year

LING 2578  Phonetics (Fall)
LING 2144  Research Methods (Fall)
LING 2773  Morphology (Fall)
LING 2777  Syntax (Spring)
LING 2579  Phonology (Spring)
Required courses that can be taken any time

One course in sociolinguistics/language change, typically fulfilled by one of the following:

LING 2267  Sociolinguistics
LING 2680  Historical Linguistics
LING 2253  Language Contact

Required upper level course: Choose one advanced level core course approved by the student's advisor and Director of Graduate Studies or Chair.

Applied Linguistics ARCO PhD Course Requirements

LING 2146  Second Language Acquisition
LING 2142  Second Language Teaching

A course in psycholinguistics or first language development

A course in statistics

One of the following:

LING 2147  Current Issues in Second Language Learning
LING 2149  Advanced Second Language Acquisition

Hispanic Linguistics ARCO PhD Requirements

Required Courses

LING 2394  Spanish Dialectology
LING 2391  Spanish Phonology

Two Special Topics courses in Hispanic Linguistics

A course in statistics

Other requirements

Entrance requirement: Advanced Low Proficiency in Spanish as measured by an OPI or equivalent. Students are also interviewed by faculty in Spanish during the admissions process.

In core courses, students are encouraged to work on topics in Hispanic linguistics and to use Spanish sources.

Further specialization within Hispanic Linguistics: Students may wish to focus on Applied Spanish Linguistics or Spanish Sociolinguistics, but these are not official ARCOs.

Sociolinguistics ARCO PhD Course Requirements

Sociolinguistics (if not already taken)

Field Methods

SOC 2102: Sociological Theory 2 - Post-Classical
A statistics course

Two of the following:

LING 2271  Discourse Analysis
LING 2274  Language Contact
LING 2269  Variation Analysis
LING 2860  Historical Linguistics

Other MA/PhD Requirements

Language requirement:

Native speakers of English: 1) three semesters of a language taught at the college level plus 2) at least one semester with a grade of B or better in a language that is not Germanic, Greek, Italic (Romance, including Latin), or Slavic.

Non-native speakers of English: 1) English-language proficiency and 2) at least one semester with a grade of B or better in a language that is not Germanic, Greek, Italic (Romance, including Latin), or Slavic.

Candidates for the Hispanic Linguistics ARCO: 1) English-language proficiency, 2) at least one semester with a grade of B or better in a language that is not Germanic, Greek, Italic (Romance, including Latin), or Slavic, and 3) satisfactorily completing the Spanish language proficiency required of candidates.

Preliminary exam

Students entering without an MA: The preliminary exam is fulfilled by attaining a grade of B+ or better on the final exam of all core courses with a B+ grade or better, and by submitting a portfolio of written work from coursework.

Upon completion of all core courses, the students must assemble three course papers from any course taken: one paper to come from the ARCO; and at least one paper from phonetics, phonology, morphology, or syntax. Students are encouraged revise their papers in light of the feedback from their course instructors before submitting the papers for the preliminary evaluation. This portfolio must be submitted by January 15th of the second academic year. A rubric for evaluation is used for evaluation and is available on the graduate student courseweb page. Faculty will review the portfolio and determine by March 15 if the student passes or fails. In addition, faculty may request written evaluations of writing performance from any former instructors. The consequences of failing depend on the nature of the shortcoming. The most extreme consequence is immediate termination from the program, but a student may also be required to remediate knowledge that is lacking in a particular area and resubmit that portion of the preliminary portfolio.

Students entering with an MA: Students entering with an MA degree may petition to have core courses waived. In order to waive phonetics, phonology, morphology or syntax, a student must demonstrate knowledge by providing course syllabi and passing an oral interview. In order to fulfill the portfolio requirement when entering with an MA, a student must submit an identical portfolio as outlined above from their MA coursework by the end of their first semester of study. Students will be notified of the outcome by the end of the next semester.

Comprehensive exam

Two comprehensive papers are required to fulfill the comprehensive exam requirement for the Linguistics PhD. The topics of the two papers must be substantially different. Although the topics can be in the same specialty of linguistics, at least one paper should involve linguistic form or structure (for example, by analyzing the acquisition of a particular syntactic construction, by investigating variation of a phonological variable, or by doing a theoretical analysis in syntax or phonology). Both papers have a paper and presentation portion, but only one of the presentations must be public in department colloquium. The second paper can be presented to the readers only, but it is possible to present it publicly.

Only upon completion of the second comprehensive paper should the milestone card be sent to the Graduate Administrator, who will forward it to the office of the Dean of Graduate Students.

Comprehensive Paper Procedures
The following procedures are for each paper. The student should first discuss the general topics of the two comps papers with their main advisor, and identify likely committee readers for each paper. Readers are strongly encouraged to meet with the student and agree on the scope of the content of the paper, and an appropriate timeline, before the student begins work. It is suggested that students develop comprehensive papers from papers written for a course.

The student must obtain agreement from the faculty members to be readers and set a timeline. One reader must be designated as the primary reader and will have responsibility mentoring the student's research and writing. The readers must be minimally composed of at least two Pitt Department of Linguistics faculty members. The amount of consultation required by readers will vary and should be negotiated with the student and primary reader. The student will work primarily with the primary reader. They should agree on a target presentation date and (if relevant) must notify the committee in charge of scheduling colloquia the semester preceding the semester in which the paper will be presented.

Procedure for the public comps presentation: The student presents the paper in 30 minutes. This presentation is followed by a 15-minute question session in which faculty, students, and other audience members may pose questions to the student. All non-faculty, including the student, then withdraw for 10 minutes as all faculty present discuss the strengths and weaknesses of the presentation and paper, and decide on a grade. The student is then invited in and informed of the grade and, if there is time, to listen to faculty comments and requirements for revision.

Procedure for the non-public comps presentation: The student presents the paper in 30 minutes. This presentation is followed by a 15-minute question session in which readers may pose questions to the student. The student then withdraws for approximately 10 minutes as readers discuss the strengths and weaknesses of the presentation and paper, and decide on a grade. The student is then invited in and informed of the grade and, if there is time, to listen to faculty comments and requirements for revision.

Outcome: The faculty must decide on two grades: one for the presentation and one for the paper. The student can either pass or fail the presentation. For the paper, the student can pass with no revisions, pass with revisions, or fail. The following actions for all combinations are as follows:

- Pass presentation and paper with no revisions. Student gathers signatures from committee and submits.
- Pass presentation and paper with revisions: Student must perform the required revisions under the supervision of the primary reader within four months of the presentation.
- Pass presentation and fail the paper: Student must write a new paper and present it within six months, or as soon thereafter as practical.
- Fail presentation and pass paper with no revisions. Student must present again within one semester.
- Fail presentation and pass paper with revisions: Student must perform the required revisions under the supervision of the committee chair within four months of the presentation and present again within one semester.
- Fail presentation and fail the paper: At the discretion of the faculty, the student must write a new paper and present it within one semester.

If a student fails the paper more than once (total for both comprehensive papers), they will be terminated from the program.

Once the paper is approved, it should be signed on the cover page (available on Graduate Student courseweb site) by the readers and the signed copy given to the Graduate Administrator to place in the student's file. The Graduate Administrator will also record completion of the comprehensive paper.

Once both comprehensive papers have been filed, a "Report of Examination" card is filled out by the Graduate Administrator, approved by the student's principal academic advisor and the DGS and then the Graduate Administrator sends the Examination Card to the Dietrich School Graduate Dean's office. All Examination Cards must be sent to the Dean's office by the Graduate Administrator.

Dissertation proposal

When the student has successfully completed the PhD comprehensive examination, they must prepare a dissertation proposal and present it in a formal dissertation proposal defense. A four-person (minimum) doctoral committee will direct the dissertation and administer the required proposal defense after the proposal has been submitted. Students and advisors are strongly advised to consult the regulations pertaining to the dissertation committee at the Dietrich School level, as outlined in the Graduate Bulletin. The student chooses the chair of the doctoral committee, and together they select the remaining committee members, subject to the approval of the DGS or Department Chair. One of the committee members must be from outside the core faculty of the Department of Linguistics, while three members must be affiliated with the Linguistics Department. The committee may be composed of more than four members, but at least four must be on the graduate faculty of the University of Pittsburgh. The fourth member may be from outside the University, but must be approved by the Graduate Dean. Consult the Graduate Bulletin, the DGS, or the Graduate Administrator for details and procedures.
A dissertation proposal must have at least two main elements: a knowledge essay and a proposal. The dissertation advisor will determine exactly the format for these two elements. For example, the advisor may require the first few literature review chapters of the dissertation for the knowledge essay portion, and then require a student to provide a proposal based on those chapters. Alternately, the advisor may construct a series of questions about the topic that a student must satisfactorily answer (in written essay form) in addition to providing a proposal. Students should confirm in writing the exact expectations of their advisor for the proposal. In addition to these main elements, a proposal must have a proposed timeline for work with deadlines for specific milestones, including the submission of specific chapters.

The advisor and student must schedule a dissertation overview meeting at which all members can attend. It is suggested that this be scheduled at least six months in advance, and the date should avoid the last three weeks of the semester. Overview meetings are only held during the fall and spring terms. Dietrich School regulations dictate that all members of the committee must be physically present at the proposal meeting (in other words, no telephone or Skype participation). There are no dedicated department or Dietrich School funds available for travel of outside members to Pittsburgh for such meetings. As soon as a date is set, the student must inform the Graduate Administrator. The Graduate Administrator will prepare an "Admission to Candidacy" form and the Graduate Administrator will forward it to the advisor prior to the overview meeting. The advisor must obtain committee members' signatures on the form at the conclusion of the defense. If revisions are needed, the committee chair will withhold the form until all committee members are satisfied with the revisions, at which time the form is sent to the Graduate Administrator.

The overview meeting itself is not a defense, but rather a 'meeting of experts.' The student is the only expert in all of the knowledge needed for the dissertation, and the committee has specific expertise and experience to help the student carry out the proposal. There need not be a presentation at the event; the format is determined by the advisor. The overview's purpose is for the committee to work with the student to ensure that the dissertation, if completed as proposed, will be a significant contribution to knowledge in linguistics. In addition, they will determine whether the project is feasible in the timeline. The overview is useful for the student because they will know that if they perform the study as outlined in the proposal, they should successfully pass this requirement.

Note that the Dietrich School requires a delay of at least eight months between the admission to candidacy and the defense, so it is imperative not to delay the overview meeting. (Note that the date of admission to candidacy is not the same as the proposal defense date -- there will be a delay between the two).

Dissertation

After being admitted to candidacy, the student will conduct dissertation research and write a dissertation primarily in consultation with the main advisor, with secondary consultation with committee members when needed. If the dissertation requires more than one year, the committee must meet with the student yearly to discuss progress.

Students are highly encouraged to consult at least monthly with their advisor, and they should be proactive about setting up such meetings - do not wait for the advisor to ask how things are going! Do not write a whole dissertation and give it to an advisor as one lump; rather, send completed chapter drafts for comment. This will avoid headache later on and is the most efficient method. Students who write the entire dissertation and submit it often lose most of that work because it is unacceptable.

A dissertation defense should be scheduled at least six months in advance. The dissertation draft should be submitted to the committee at least one month before the defense, and the defense draft must be approved by the advisor. The date of the defense thus involves some educated guesswork on the part of the advisor and the student. As soon as the defense date is set, the student must notify the Graduate Administrator, who will help the student with other procedures surrounding the defense. (See also the Graduate Bulletin and Policies for regulations governing the dissertation committee and defense).

The dissertation defense is by regulation open to all members of the University community, and all graduate faculty members who attend have the right to pose questions to the candidate.

Required Core Courses for the MA/PhD

The following courses are required of all students in the MA/PhD program. Students entering with an MA degree from another institution may petition to have coursework taken for that MA degree apply to the PhD degree at Pitt. See also the Preliminary exam requirement.

Courses required to be taken in the first year

- LING 2578 - PHONETICS AND PHONEMICS (Fall)
- LING 2579 - PHONOLOGY (Spring)
Required courses that can be taken any time

One course in socio/language change

- LING 2267 - SOCIOLINGUISTICS
- LING 2253 - PIDGIN AND CREOLE LANGUAGES

Choose one advanced level core course approved by the student's advisor.

Some example courses fulfilling this requirement:

**Linguistics - Applied Hispanic Linguistics Concentration, MA/PhD**

The degree programs in linguistics combine a solid foundation in the core areas of linguistic theory (phonetics, phonology, syntax) with courses in specialized fields of applied linguistics, Hispanic linguistics and sociolinguistics/sociology of language. Within applied linguistics, students may choose from topics such as second language acquisition, language teaching methodology, and the development of teaching materials/tests. The department also offers a certificate in teaching English to speakers of other languages (TESOL). In sociolinguistics, students may focus on discourse analysis, variation and change, and socio-phonetics. In Hispanic linguistics, students may focus on phonetics, sociolinguistics, and second language acquisition.

**Required Core Courses for the MA/PhD**

The following courses are required of all students in the MA/PhD program. Students entering with an MA degree from another institution may petition to have coursework taken for that MA degree apply to the PhD degree at Pitt. See also the Preliminary exam requirement.

Courses required to be taken in the first year

- LING 2578 - PHONETICS AND PHONEMICS (Fall)
- LING 2579 - PHONOLOGY (Spring)
- LING 2773 - MORPHOLOGY (Fall)
- LING 2777 - SYNTACTIC THEORY (Spring)
- LING 2144 - RES METHODS IN APPLIED LING (Fall)

Required courses that can be taken any time

One course in socio/language change

- LING 2267 - SOCIOLINGUISTICS
- LING 2253 - PIDGIN AND CREOLE LANGUAGES

Choose one advanced level core course approved by the student's advisor.

Some example courses fulfilling this requirement:
PhD Requirements

Courses

- LING 2394 - SPANISH DIALECTOLOGY

Other requirements

Entrance requirement: Advanced Proficiency in Spanish as measured by an OPI or equivalent.

In core courses, students are encouraged to work on topics in Hispanic linguistics and to use Spanish sources.

All papers must have a significant Hispanic element, and a significant number of sources in Spanish.

Students may wish to focus on Applied Spanish Linguistics or Spanish Sociolinguistics, but these are not official ARCOs. The following are suggested courses.

Applied Spanish Linguistics:

Education of Linguistic Minorities
Second Language Acquisition
Approaches and Methods of TESOL
Techniques and Procedures of TESOL

Spanish Sociolinguistics:

Education of Linguistic Minorities
Language Contact
Discourse Analysis
Variation Analysis

Other MA/PhD Requirements

Language requirements:

There are many ways that students come to learning languages; not all of them are covered here. If you have learned another language and have questions about this requirement, you are encouraged, admonished, and requested to ask the DGS about it. Do not rely on rumors from other students.

1. Reading proficiency in two languages other than English is required. Oral proficiency in one language other than English is also required (the language fulfilling the oral requirement may be the same as one of those fulfilling the reading requirement). This requirement is normally satisfied by examination, which is arranged on an ad hoc basis with the DGS. Language course credits may also be used with the approval of the DGS.

2. Students whose native language is not English and who complete their core courses with a grade of B+ or better will be considered to have completed the oral and reading requirements for one language. Such students will still need to demonstrate reading proficiency in another language.

3. If a student speaks two languages natively and one of these is English, the student need only demonstrate proficiency in one further language.

4. In addition to the basic second language requirement above, the department requires one term of study with a grade of B or better in a language that is not Germanic, Greek, Italic (Romance, including Latin), or Slavic. For a list of languages in these branches, see http://www.danshort.com/ie/iefamilyfull.htm. If a student studies such a language for one of the other language requirements, no extra language need be taken. For applied linguists, however, this requirement must be fulfilled by classroom study. This requirement cannot be fulfilled by Field Methods.

5. Example 1: A student may pass an exam reading Spanish, and then take two years of Vietnamese to allow her/him to pass a reading and oral proficiency exam. In this case all language requirements have been fulfilled.

6. Example 2: A native Spanish-speaking student passes all core courses with an A grade. She/he then takes one semester of Japanese. This student has fulfilled the language requirement.
**Preliminary exam**: The preliminary exam is fulfilled by submitting a portfolio of written coursework and passing the final exam of all core courses with a B+ grade or better. With respect to the thesis, the student is considered to have passed the preliminary exam if the thesis committee recommends the student for doctoral study.

Students entering with an MA degree may petition to have core courses waived. In order to waive phonetics, phonology, morphology or syntax, a student must demonstrate knowledge by providing course syllabi and passing an oral interview. In order to fulfill the preliminary exam requirement when entering with an MA, a student must have written a thesis for the previous MA; in addition, the student must defend the previous thesis in their first year at Pitt. Students are advised to have the MA thesis approved by the faculty and set up a defense committee and date as soon as possible after they begin PhD study. If a student's MA did not require a thesis, then the student must submit a portfolio of written work from their coursework in order to pass the preliminary exam (in addition to the core course requirement).

**Comprehensive exam**: Two comprehensive papers are required to fulfill the comprehensive exam requirement for the Linguistics PhD.

The topics of the two papers must be substantially different. Although the topics can be in the same specialty of linguistics, at least one paper should in some way involve linguistic form or structure (for example, by analyzing the acquisition of a particular syntactic construction, by investigating variation of a phonological variable, or by doing a theoretical analysis in syntax or phonology).

One of the comps papers must be presented publicly in a 30-minute lecture at a department colloquium, and the other may be presented to the committee only (however, if the student wishes, both papers may be presented publicly).

**Dissertation proposal**: When the student has successfully completed the PhD comprehensive examination, she or he must prepare a dissertation proposal and present it in a formal dissertation proposal defense. A four-person doctoral committee will direct the dissertation and administer the required proposal defense after the proposal has been submitted. The student chooses the chair of the doctoral committee, and together they select the remaining committee members, subject to the approval of the department chair. One of the committee members must be from outside the core faculty of the Department of Linguistics, while three members must be affiliated with the Linguistics Department. The committee may be composed of more than four members, but at least four must be on the graduate faculty of the University of Pittsburgh.

A dissertation proposal must have at least two elements: a knowledge essay and a proposal. The dissertation advisor will determine exactly the format for these two elements. For example, the advisor may require the first few literature review chapters of the dissertation for the knowledge essay portion, and then require a student to provide a proposal based on those chapters. Alternately, the advisor may construct a series of questions about the topic that a student must satisfactorily answer (in written essay form) in addition to providing a proposal. Upon approval of the proposal, the student will be admitted to candidacy for the PhD. Up to nine credits of dissertation study credits may count toward the total required number of credits.

The student should obtain an "Admission to Candidacy" form from the Graduate Secretary or DGS prior to the meeting in order to obtain at least committee signatures on the form at the conclusion of the defense. If revisions are needed, the committee chair will withhold the form until all committee members are satisfied with the revisions, at which time the form is sent to the Arts and Sciences Graduate Dean's Office.

**Dissertation**: The student must prepare and submit a dissertation that is a contribution to linguistic knowledge. A four-person doctoral committee will direct the dissertation and administer the required oral defense after the dissertation has been submitted for regulations governing the dissertation committee and defense). The dissertation defense is open to all members of the University community, and all graduate faculty members who attend have the right to pose questions to the candidate. See the bulletin regulations linked above for details.

**Sample progression through MA/PhD program (milestones)**

**Year 1**

Core courses

**Year 2**

Core courses and electives
Submit coursework portfolio
Year 3

Elective courses
Defend comprehensive 1
Present comprehensive paper in colloquium (can wait until year 4)

Year 4

Defend comprehensive 2
Present comprehensive paper in colloquium (if not done in year 3)
Dissertation proposal defense

Year 5

Dissertation research or fieldwork,
Possibly defend dissertation

Year 6

Defend and submit dissertation

Evaluation of Students

**Annual evaluation.** Students must submit an annual report to their main advisor each year by April 1. Advisors then complete an evaluation for each advisee, due to the DGS by the penultimate week of the spring semester for an evaluation meeting of faculty in the final week. Forms for both the annual review and the annual report are in the forms section of the department's graduate handbook, available from the DGS or graduate administrator.

**For progression from MA to PhD in MA/PhD program:** At the end of their first year, a written evaluation is presented to all faculty that assesses the student's work in courses and TA assignments. If unsatisfactory, students are put on notice that they will only be permitted to continue through the next year (i.e. 2nd year). The faculty may also elect to warn the student that unless their performance improves in the next semester, they will only be permitted to finish their MA. A final continuation evaluation will be based on the portfolio review.

For students entering with an MA, the first year is probationary. Students must complete the year with a GPA of 3.5, and their performance will be reviewed in the spring semester.

**For funding:** All currently-funded students, current students without funding, and newly admitted students are evaluated at the funding meeting each January. Students currently funded will also be evaluated at this time for their performance in TA duties.

Linguistics - General and Descriptive, MA/PhD

The degree programs in linguistics combine a solid foundation in the core areas of linguistic theory (phonetics, phonology, syntax) with courses in specialized fields of applied linguistics, Hispanic linguistics and sociolinguistics/sociology of language. Within applied linguistics, students may choose from topics such as second language acquisition, language teaching methodology, and the development of teaching materials/tests. The department also offers a certificate in teaching English to speakers of other languages (TESOL). In sociolinguistics, students may focus on discourse analysis, variation and change, and socio-phonetics. In Hispanic linguistics, students may focus on phonetics, sociolinguistics, and second language acquisition.

**Required Core Courses for the MA/PhD**
The following courses are required of all students in the MA/PhD program. Students entering with an MA degree from another institution may petition to have coursework taken for that MA degree apply to the PhD degree at Pitt. See also the Preliminary exam requirement.

Courses required to be taken in the first year

- LING 2578 - PHONETICS AND PHONEMICS (Fall)
- LING 2579 - PHONOLOGY (Spring)
- LING 2773 - MORPHOLOGY (Fall)
- LING 2777 - SYNTACTIC THEORY (Spring)
- LING 2144 - RES METHODS IN APPLIED LING (Fall)

Required courses that can be taken any time

One course in socio/language change

- LING 2267 - SOCIOLINGUISTICS
- LING 2253 - PIDGIN AND CREOLE LANGUAGES

Choose one advanced level core course approved by the student's advisor.

Some example courses fulfilling this requirement:

PhD Requirements

Courses

- Field Methods
- One Advanced Core Course in Phonology, Morphology or Syntax (whichever was not taken in core)
- 3000-level Advanced seminar in Phonology, Morphology or Syntax
- Sociolinguistics, or Language Contact (whichever not taken in core)
- Linguistic Typology

Other MA/PhD Requirements

Language requirements:

There are many ways that students come to learning languages; not all of them are covered here. If you have learned another language and have questions about this requirement, you are encouraged, admonished, and requested to ask the DGS about it. Do not rely on rumors from other students.

1. Reading proficiency in two languages other than English is required. Oral proficiency in one language other than English is also required (the language fulfilling the oral requirement may be the same as one of those fulfilling the reading requirement). This requirement is normally satisfied by examination, which is arranged on an ad hoc basis with the DGS. Language course credits may also be used with the approval of the DGS.

2. Students whose native language is not English and who complete their core courses with a grade of B+ or better will be considered to have completed the oral and reading requirements for one language. Such students will still need to demonstrate reading proficiency in another language.

3. If a student speaks two languages natively and one of these is English, the student need only demonstrate proficiency in one further language.

4. In addition to the basic second language requirement above, the department requires one term of study with a grade of B or better in a language that is not Germanic, Greek, Italic (Romance, including Latin), or Slavic. For a list of languages in these branches, see http://www.danshort.com/ie/iefamilyfull.htm. If a student studies such a language for one of the other language requirements, no extra language need
be taken. For applied linguists, however, this requirement must be fulfilled by classroom study. This requirement cannot be fulfilled by Field Methods.

5. Example 1: A student may pass an exam reading Spanish, and then take two years of Vietnamese to allow her/him to pass a reading and oral proficiency exam. In this case all language requirements have been fulfilled.

6. Example 2: A native Spanish-speaking student passes all core courses with an A grade. She/he then takes one semester of Japanese. This student has fulfilled the language requirement.

**Preliminary exam**: The preliminary exam is fulfilled by submitting a portfolio of written coursework and passing the final exam of all core courses with a B+ grade or better. With respect to the thesis, the student is considered to have passed the preliminary exam if the thesis committee recommends the student for doctoral study.

Students entering with an MA degree may petition to have core courses waived. In order to waive phonetics, phonology, morphology or syntax, a student must demonstrate knowledge by providing course syllabi and passing an oral interview. In order to fulfill the preliminary exam requirement when entering with an MA, a student must have written a thesis for the previous MA; in addition, the student must defend the previous thesis in their first year at Pitt. Students are advised to have the MA thesis approved by the faculty—and set up a defense committee and date—as soon as possible after they begin PhD study. If a student's MA did not require a thesis, then the student must submit a portfolio of written work from their coursework in order to pass the preliminary exam (in addition to the core course requirement).

**Comprehensive exam**: Two comprehensive papers are required to fulfill the comprehensive exam requirement for the Linguistics PhD.

The topics of the two papers must be substantially different. Although the topics can be in the same specialty of linguistics, at least one paper should in some way involve linguistic form or structure (for example, by analyzing the acquisition of a particular syntactic construction, by investigating variation of a phonological variable, or by doing a theoretical analysis in syntax or phonology).

One of the comps papers must be presented publicly in a 30-minute lecture at a department colloquium, and the other may be presented to the committee only (however, if the student wishes, both papers may be presented publicly).

**Dissertation proposal**: When the student has successfully completed the PhD comprehensive examination, she or he must prepare a dissertation proposal and present it in a formal dissertation proposal defense. A four-person doctoral committee will direct the dissertation and administer the required proposal defense after the proposal has been submitted. The student chooses the chair of the doctoral committee, and together they select the remaining committee members, subject to the approval of the department chair. One of the committee members must be from outside the core faculty of the Department of Linguistics, while three members must be affiliated with the Linguistics Department. The committee may be composed of more than four members, but at least four must be on the graduate faculty of the University of Pittsburgh.

A dissertation proposal must have at least two elements: a knowledge essay and a proposal. The dissertation advisor will determine exactly the format for these two elements. For example, the advisor may require the first few literature review chapters of the dissertation for the knowledge essay portion, and then require a student to provide a proposal based on those chapters. Alternately, the advisor may construct a series of questions about the topic that a student must satisfactorily answer (in written essay form) in addition to providing a proposal. Upon approval of the proposal, the student will be admitted to candidacy for the PhD. Up to nine credits of dissertation study credits may count toward the total required number of credits.

The student should obtain an "Admission to Candidacy" form from the Graduate Secretary or DGS prior to the meeting in order to obtain at least committee signatures on the form at the conclusion of the defense. If revisions are needed, the committee chair will withhold the form until all committee members are satisfied with the revisions, at which time the form is sent to the Arts and Sciences Graduate Dean's Office.

**Dissertation**: The student must prepare and submit a dissertation that is a contribution to linguistic knowledge. A four-person doctoral committee will direct the dissertation and administer the required oral defense after the dissertation has been submitted for regulations governing the dissertation committee and defense). The dissertation defense is open to all members of the University community, and all graduate faculty members who attend have the right to pose questions to the candidate. See the bulletin regulations linked above for details.

**Sample progression through MA/PhD program (milestones)**

**Year 1**

Core courses
Year 2

Core courses and electives
Submit coursework portfolio

Year 3

Elective courses
Defend comprehensive 1
Present comprehensive paper in colloquium (can wait until year 4)

Year 4

Defend comprehensive 2
Present comprehensive paper in colloquium (if not done in year 3)
Dissertation proposal defense

Year 5

Dissertation research or fieldwork,
Possibly defend dissertation

Year 6

Defend and submit dissertation

Evaluation of Students

**Annual evaluation.** Students must submit an annual report to their main advisor each year by April 1. Advisors then complete an evaluation for each advisee, due to the DGS by the penultimate week of the spring semester for an evaluation meeting of faculty in the final week. Forms for both the annual review and the annual report are in the forms section of the department's graduate handbook, available from the DGS or graduate administrator.

**For progression from MA to PhD in MA/PhD program:** At the end of their first year, a written evaluation is presented to all faculty that assesses the student's work in courses and TA assignments. If unsatisfactory, students are put on notice that they will only be permitted to continue through the next year (i.e. 2nd year). The faculty may also elect to warn the student that unless their performance improves in the next semester, they will only be permitted to finish their MA. A final continuation evaluation will be based on the portfolio review

For students entering with an MA, the first year is probationary. Students must complete the year with a GPA of 3.5, and their performance will be reviewed in the spring semester.

**For funding:** All currently-funded students, current students without funding, and newly admitted students are evaluated at the funding meeting each January. Students currently funded will also be evaluated at this time for their performance in TA duties.

**Linguistics - Sociolinguistics Concentration, MA/PhD**

The degree programs in linguistics combine a solid foundation in the core areas of linguistic theory (phonetics, phonology, syntax) with courses in specialized fields of applied linguistics, Hispanic linguistics and sociolinguistics/sociology of language. Within applied linguistics, students may
choose from topics such as second language acquisition, language teaching methodology, and the development of teaching materials/tests. The department also offers a certificate in teaching English to speakers of other languages (TESOL). In sociolinguistics, students may focus on discourse analysis, variation and change, and socio-phonetics. In Hispanic linguistics, students may focus on phonetics, sociolinguistics, and second language acquisition.

**Required Core Courses for the MA/PhD**

The following courses are required of all students in the MA/PhD program. Students entering with an MA degree from another institution may petition to have coursework taken for that MA degree apply to the PhD degree at Pitt. See also the Preliminary exam requirement.

**Courses required to be taken in the first year**

- LING 2578 - PHONETICS AND PHONEMICS (Fall)
- LING 2579 - PHONOLOGY (Spring)
- LING 2773 - MORPHOLOGY (Fall)
- LING 2777 - SYNTACTIC THEORY (Spring)
- LING 2144 - RES METHODS IN APPLIED LING (Fall)

**Required courses that can be taken any time**

**One course in socio/language change**

- LING 2267 - SOCIOLINGUISTICS
- LING 2253 - PIDGIN AND CREOLE LANGUAGES

Choose one advanced level core course approved by the student's advisor.

Some example courses fulfilling this requirement:

**PhD Requirements**

- Sociolinguistics (if not already taken)
- Field Methods
- SOCI 2102 - SOCIOLGCL THRY POST CLASSICAL
- An appropriate statistics course

Two of:

- Discourse Analysis
- Language Contact
- Sociology of Language
- Variation Analysis

**Other MA/PhD Requirements**

**Language requirements:**
There are many ways that students come to learning languages; not all of them are covered here. If you have learned another language and have questions about this requirement, you are encouraged, admonished, and requested to ask the DGS about it. Do not rely on rumors from other students.

1. Reading proficiency in two languages other than English is required. Oral proficiency in one language other than English is also required (the language fulfilling the oral requirement may be the same as one of those fulfilling the reading requirement). This requirement is normally satisfied by examination, which is arranged on an ad hoc basis with the DGS. Language course credits may also be used with the approval of the DGS.

2. Students whose native language is not English and who complete their core courses with a grade of B+ or better will be considered to have completed the oral and reading requirements for one language. Such students will still need to demonstrate reading proficiency in another language.

3. If a student speaks two languages natively and one of these is English, the student need only demonstrate proficiency in one further language.

4. In addition to the basic second language requirement above, the department requires one term of study with a grade of B or better in a language that is not Germanic, Greek, Italic (Romance, including Latin), or Slavic. For a list of languages in these branches, see http://www.danshort.com/ie/iefamilyfull.htm. If a student studies such a language for one of the other language requirements, no extra language need be taken. For applied linguists, however, this requirement must be fulfilled by classroom study. This requirement cannot be fulfilled by Field Methods.

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One of the comps papers must be presented publicly in a 30-minute lecture at a department colloquium, and the other may be presented to the committee only (however, if the student wishes, both papers may be presented publicly).

**Dissertation proposal:** When the student has successfully completed the PhD comprehensive examination, she or he must prepare a dissertation proposal and present it in a formal dissertation proposal defense. A four-person doctoral committee will direct the dissertation and administer the required proposal defense after the proposal has been submitted. The student chooses the chair of the doctoral committee, and together they select the remaining committee members, subject to the approval of the department chair. One of the committee members must be from outside the core faculty of the Department of Linguistics, while three members must be affiliated with the Linguistics Department. The committee may be composed of more than four members, but at least four must be on the graduate faculty of the University of Pittsburgh.

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The student should obtain an "Admission to Candidacy" form from the Graduate Secretary or DGS prior to the meeting in order to obtain at least committee signatures on the form at the conclusion of the defense. If revisions are needed, the committee chair will withhold the form until all committee members are satisfied with the revisions, at which time the form is sent to the Arts and Sciences Graduate Dean's Office.
**Dissertation**: The student must prepare and submit a dissertation that is a contribution to linguistic knowledge. A four-person doctoral committee will direct the dissertation and administer the required oral defense after the dissertation has been submitted for regulations governing the dissertation committee and defense. The dissertation defense is open to all members of the University community, and all graduate faculty members who attend have the right to pose questions to the candidate. See the bulletin regulations linked above for details.

**Sample progression through MA/PhD program (milestones)**

**Year 1**
Core courses

**Year 2**
Core courses and electives
Submit coursework portfolio

**Year 3**
Elective courses
Defend comprehensive 1
Present comprehensive paper in colloquium (can wait until year 4)

**Year 4**
Defend comprehensive 2
Present comprehensive paper in colloquium (if not done in year 3)
Dissertation proposal defense

**Year 5**
Dissertation research or fieldwork,
Possibly defend dissertation

**Year 6**
Defend and submit dissertation

**Evaluation of Students**

**Annual evaluation.** Students must submit an annual report to their main advisor each year by April 1. Advisors then complete an evaluation for each advisee, due to the DGS by the penultimate week of the spring semester for an evaluation meeting of faculty in the final week. Forms for both the annual review and the annual report are in the forms section of the department's graduate handbook, available from the DGS or graduate administrator.

**For progression from MA to PhD in MA/PhD program:** At the end of their first year, a written evaluation is presented to all faculty that assesses the student's work in courses and TA assignments. If unsatisfactory, students are put on notice that they will only be permitted to continue through
the next year (i.e. 2nd year). The faculty may also elect to warn the student that unless their performance improves in the next semester, they will only be permitted to finish their MA. A final continuation evaluation will be based on the portfolio review.

For students entering with an MA, the first year is probationary. Students must complete the year with a GPA of 3.5, and their performance will be reviewed in the spring semester.

**For funding:** All currently-funded students, current students without funding, and newly admitted students are evaluated at the funding meeting each January. Students currently funded will also be evaluated at this time for their performance in TA duties.

**Linguistics - Applied Linguistics Concentration, MA**

**Requirements for a terminal MA in Applied Linguistics**

The Department offers a terminal MA degree in Applied Linguistics, with or without the TESOL Certification (see below for TESOL Certificate requirements). 30 credits are required for the MA Degree.

**Required Courses**

- LING 2578 Phonetics
- LING 2579 Phonology
- LING 2777 Syntax
- LING 2144 Research Methods

One course in sociolinguistics/language change. Choose one from:

- LING 2267 Sociolinguistics
- LING 2680 Historical Linguistics
- LING 2253 Language Contact
- LING 2146 Second Language Acquisition

A language pedagogy course

Choose one from:

- A course in psycholinguistics
- A course in First Language Development
- LING 2147 Current Issues in Second Language Acquisition

**Other MA Requirements**

**Course Grades**

Students must attain a B+ in all core courses. If the grade is lower than a B+, in consultation with the DGS and the course instructor, a student must take the final exam the following year and attain a grade of B+ on the exam, or retake the course.

**Language requirement**

Proficiency in one foreign language is required for the MA degree.

Native-English speakers: three terms of a language taught at the college level.
Non-native speakers of English: Completion of the MA coursework with a grade point average of B (3.0) or better.

Comprehensive exam

The comprehensive exam is fulfilled by attaining a grade of B+ or better in all core courses.

Students who do not attain a B+ in a particular course may retake the course or perform remedial work with the approval of the DGS and their advisor. Students must notify the DGS and their advisor immediately upon receiving a deficient grade (ideally, they should notify even earlier if they are performing poorly in a particular course, as advisors may be able to help set up tutoring). Students falling short in multiple core courses may be terminated from the program.

Requirements

Required Courses for all linguistics MA degrees

- LING 2578 - PHONETICS AND PHONEMICS
- LING 2579 - PHONOLOGY
- LING 2777 - SYNTACTIC THEORY
- LING 2144 - RES METHODS IN APPLIED LING

Choose from:

One course in sociolinguistics/language change.

- LING 2267 - SOCIOLINGUISTICS
- LING 2253 - PIDGIN AND CREOLE LANGUAGES

Requirements for Applied Linguistics

- LING 2146 - SECOND LANGUAGE ACQUISITION
- Language pedagogy course

Choose one:

- LING 2147 - CUR ISSUES IN SECOND LANG LRNG
- LING 2149 - ADV SECOND LANGUAGE ACQUISITION

Other MA Requirements

Comprehensive exam: Students must attain a B+ in all core courses. If the grade is lower than a B+, a student must re-take the final exam the following year-or take an exam through other arrangements-and attain a grade of B+ on the exam, or retake the course.

Language requirement: Proficiency in one second language is required for the MA degree. This requirement is satisfied by examination for students whose native language is English. Students whose native language is not English and who complete their MA work with a grade point average of B (3.0) or better will have fulfilled this requirement automatically.

Portfolio Review: See the department's graduate student handbook.

Linguistics, MA
The degree programs in linguistics combine a solid foundation in the core areas of linguistic theory (phonetics, phonology, syntax) with courses in specialized fields of applied linguistics, Hispanic linguistics and sociolinguistics/sociology of language. Within applied linguistics, students may choose from topics such as second language acquisition, language teaching methodology, and the development of teaching materials/tests. The department also offers a certificate in teaching English to speakers of other languages (TESOL). In sociolinguistics, students may focus on discourse analysis, variation and change, and socio-phonetics. In Hispanic linguistics, students may focus on phonetics, sociolinguistics, and second language acquisition.

Requirements

Required Courses for all linguistics MA degrees

- LING 2578 - PHONETICS AND PHONEMICS
- LING 2579 - PHONOLOGY
- LING 2777 - SYNTACTIC THEORY
- LING 2144 - RES METHODS IN APPLIED LING

Choose from:

One course in sociolinguistics/language change.

- LING 2267 - SOCIOLINGUISTICS
- LING 2253 - PIDGIN AND CREOLE LANGUAGES

Other MA Requirements

Comprehensive exam: Students must attain a B+ in all core courses. If the grade is lower than a B+, a student must re-take the final exam the following year or take an exam through other arrangements and attain a grade of B+ on the exam, or retake the course.

Language requirement: Proficiency in one second language is required for the MA degree. This requirement is satisfied by examination for students whose native language is English. Students whose native language is not English and who complete their MA work with a grade point average of B (3.0) or better will have fulfilled this requirement automatically.

Portfolio Review: See the department's graduate student handbook.

Required Core Courses for the MA/PhD

The following courses are required of all students in the MA/PhD program. Students entering with an MA degree from another institution may petition to have coursework taken for that MA degree apply to the PhD degree at Pitt. See also the Preliminary exam requirement.

Courses required to be taken in the first year

- LING 2578 - PHONETICS AND PHONEMICS (Fall)
- LING 2579 - PHONOLOGY (Spring)
- LING 2773 - MORPHOLOGY (Fall)
- LING 2777 - SYNTACTIC THEORY (Spring)
- LING 2144 - RES METHODS IN APPLIED LING (Fall)

Required courses that can be taken any time
One course in socio/language change

- LING 2267 - SOCIOLINGUISTICS
- LING 2253 - PIDGIN AND CREOLE LANGUAGES

Choose one advanced level core course approved by the student's advisor.

Some example courses fulfilling this requirement:

Department of Mathematics

The Department of Mathematics offers programs leading to a Master of Arts in mathematics, Master of Science in mathematics, Master of Arts in applied mathematics, Master of Science in applied mathematics, Dual MS degree in mathematics and computer science. The department also offers a Doctor of Philosophy in mathematics.

Contact Information

Department Chair: Jonathan Rubin
Main Office: 301 Thackeray Hall
412-624-1175
Fax: 412-624-8397
E-mail: hmm79@pitt.edu
www.mathematics.pitt.edu/

Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Mathematics, Graduate Administrator, 301 Thackeray Hall, Pittsburgh, PA 15260. Phone: 412-624-1175. Fax: 412-624-8397. E-mail: hmm79@pitt.edu

Admissions

Official TOEFL scores from the Educational Testing Service are required if you are an international student whose native language is not English. International applicants whose first language is not English must attain either a minimum TOEFL (administered by the Educational Testing Service) score of 577 (paper-based test), 90 (internet-based test), or an IELTS (administered by the University of Cambridge, Local Examinations Syndicate) score of 7.0. All applicants are required to submit official GRE scores and are highly encouraged to submit GRE Mathematics subject test scores.

Financial Assistance

If there are adequate funds, graduate students receiving a fellowship or teaching assistantship/teaching fellowship who have demonstrated high-quality graduate work can expect to have financial aid renewed for up to two years. Renewal beyond the second year occurs only if they have successfully passed the PhD preliminary examination by April of the second year. Renewal beyond the third year similarly depends upon passing the PhD comprehensive exam. Beyond that, additional financial aid from the department will be contingent upon a yearly review assessing progress toward completing the dissertation and, under normal conditions, can continue for five years. A graduate student who has not passed these examinations, as described above, is not eligible for additional financial assistance until these examinations are passed.

Faculty

Dietrich School of Arts and Sciences Faculty
Mathematics, PhD

Requirements for the PhD

A student must maintain a B average over 72 credit hours of course work and pass departmental preliminary and comprehensive examinations. The main requirement for the Doctor of Philosophy (PhD) degree in mathematics is the successful completion and defense of a dissertation embodying a substantial piece of original mathematical research. The main stages are listed below.

PhD Preliminary Examination: Students must pass a written preliminary examination on advanced linear algebra and multivariable calculus. The preliminary examination should be attempted as early as possible and must be passed by April of their second year for support to be extended for a third year.

Comprehensive Examination: Students must pass a PhD comprehensive examination demonstrating their competence in their chosen area of mathematics after approximately one year of course work beyond the preliminary examination or within three years of study.

Dissertation Overview: Following successful completion of the comprehensive examination, students file an application for admission to candidacy for the Doctor of Philosophy. At this stage, students present a proposed topic for doctoral research and a research work plan for its execution to be reviewed by their dissertation committee.

Dissertation Defense: The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and is open to the University community.

Most candidates will require from three to five years of full-time study to complete the degree. Part-time students may be allowed as many as 10 years to finish all requirements.

Additional information and details concerning examinations, requirements, and the advising system can be found in the departmental handbook.

Mathematics and Computer Science, MA/MS

Requirements for the Dual Degree

The dual degree program requires the completion of a minimum of 45 credits of course work through either a thesis or non-thesis option. The total set of courses taken must include, as a subset, the course requirements for MA degree in mathematics and a MS degree in computer science.

Mathematics/Civil Engineering, MS/MSCE

Joint Master's Degree

A student is able to earn the Master of Science Civil Engineering degree and the Master of Science degree in mathematics at the same time. In general, 42 credits are required, and students must complete the fundamental courses in both areas.

Mathematics, MA

Degree Requirements

http://www.mathematics.pitt.edu/graduate/graduate-handbook

Requirements for the MA
The MA in mathematics requires completion of at least ten mathematics courses (30 credits) and an oral comprehensive examination. Six of the ten courses must be taken at the 2000-3000 level; the remaining ones may be those given by the department at the 1000 level or those cross-listed with other departments. Achievement of an overall course average of B or better is required for all courses.

The master's programs in applied mathematics contain several tracks, each having a selection of required and elective courses. The MA program requires 30 credits (minimum of 7 departmental, with 5 (of the 7) at the 2000 level or above) and an oral comprehensive examination. An MS option is available that requires a total of 30 credits and a thesis (24 course credits + 6 credits-thesis).

Requirements for the MS

The MS in mathematics requires completion of at least eight mathematics courses (24 credits) and the completion and defense of a thesis in mathematics (6 credits). Six of the eight courses must be taken at the 2000-3000 level; the remaining ones may be those given by the department at the 1000 level or those cross-listed with other departments. Achievement of an overall course average of B or better is required for all courses.

The master's programs in applied mathematics contain several tracks, each having a selection of required and elective courses. The MA program requires 30 credits (minimum of 7 departmental, with 5 (of the 7) at the 2000 level or above) and an oral comprehensive examination. An MS option is available that requires a total of 30 credits and a thesis (24 course credits + 6 credits-thesis).

Mathematics, MS

Degree Requirements

Requirements for the MA

Requirements for the MS
Medieval and Renaissance Studies Program

Students doing graduate work in the Medieval and Renaissance periods require a particularly broad interdisciplinary background. To meet this need, the faculty involved in MRST at the University of Pittsburgh have instituted a certificate program that is designed to enrich the student's work in the major department while allowing the student to undertake inventive interdisciplinary projects.

Each year the MRST Program organizes a series of lectures featuring visiting national and international scholars and distinguished speakers from the Pittsburgh area. We collaborate with PCMRS, the Pittsburgh Consortium for Medieval and Renaissance Studies (www.pcmrs.org), in regularly bringing together faculty and graduate students from Pitt, Carnegie Mellon, Duquesne, and many other area universities.

Contact Information

Director: Christopher Nygren
Graduate Administrator: Briar Somerville
Main Office: 454 Cathedral of Learning
Phone: 412-624-6564
E-mail: kbs47@pitt.edu
http://www.medren.pitt.edu/

Admissions

Students who are already enrolled in a graduate degree program at Pitt can apply for the Certificate in Medieval and Renaissance Studies at any time during their graduate studies, but are encouraged to apply as early in their program of study as possible. Contact Graduate Administrator Briar Somerville at kbs47@pitt.edu for a certificate application form.

Requirements for the Certificate

For students wishing to complete the MRST certificate at the graduate level, the most important requirement is a research paper focused on medieval and/or Renaissance Studies. As specified by the University, a MA certificate also requires at least 15 credits (5 courses) and a PhD certificate requires 18 credits (6 courses). Many of these credits may be drawn from coursework already required for the student's degree in the home department (for instance, the requirements for English, HAA, or French and Italian). Working with the Director of MRST, the student will create an individually tailored course of study that gives consideration both to the requirements of home departments and to the importance of interdisciplinary study.

Faculty

Dietrich School of Arts and Sciences Faculty

Medieval and Renaissance Studies Doctoral Certificate

This is a certificate program for MA or PhD students in one of the disciplines who desire to pursue additional interdisciplinary work in Medieval or Renaissance studies.

PhD Certificate Requirements

1. A PhD thesis of an interdisciplinary nature focused on medieval and/or Renaissance studies.
2. At least four graduate courses focused on medieval and/or Renaissance studies. We strongly encourage students to take courses outside of their home departments. In some cases-involving, for instance, infrequent course offerings or research abroad-students may petition the Director to reduce the number of courses required.

3. A reading knowledge of one language other than English. We also strongly recommend (but do not require) that PhD certificate candidates acquire a reading knowledge of Latin.

4. A one-page cover letter attached to the thesis. The letter should be addressed to the Program Director and should use direct language and specific examples. In this letter, we would like you to reflect on what you have learned from earning a certificate from the Program in Medieval and Renaissance Studies.

**Medieval and Renaissance Studies Master's Certificate**

This is a certificate program for MA or PhD students in one of the disciplines who desire to pursue additional interdisciplinary work in Medieval or Renaissance studies.

**MA Certificate Requirements**

1. A major interdisciplinary research paper in medieval and/or Renaissance studies. This may be either an MA thesis or a substantial term paper (20 - 30 pages).

2. At least two graduate courses focused on medieval and/or Renaissance studies. We strongly encourage students to take courses outside of their home departments. In some cases-involving, for instance, infrequent course offerings or research abroad-students may petition the Director to reduce the number of courses required.

3. We strongly recommend (but do not require) that MA certificate candidates acquire a reading knowledge of at least one language other than English.

4. A one-page cover letter attached to the research paper. The letter should be addressed to the Program Director and should use direct language and specific examples. In this letter, we would like you to reflect on what you have learned from earning a certificate from the Program in Medieval and Renaissance Studies.

**Molecular Biophysics and Structural Biology Program**

The Molecular Biophysics and Structural Biology graduate program at the University of Pittsburgh and Carnegie Mellon University educates students to conduct research at the interface between biology, chemistry, and physics. The disciplines of Molecular Biophysics and Structural Biology aim to unravel and explain biological phenomena and processes in atomic and molecular detail. Research carried out by program faculty covers a diverse range of topics in Molecular Biophysics and Structural Biology. Areas of study focus on understanding fundamental principles involved in reactions and regulatory interactions in biological systems. Our research projects attempt to answer the key questions, such as: How do proteins fold and can we prevent misfolding? Can we design proteins with novel functions? How does the coordinated interaction between proteins and nucleic acids lead to cellular differentiation and the formation of an organism? How do macromolecules assemble into molecular machines and viruses? How do these assemblies operate? How do signals traverse membranes?

**Contact Information**

University of Pittsburgh and Carnegie Mellon University
Molecular Biophysics and Structural Biology Graduate Program
Graduate Studies Office
3550 Terrace Street
M240 Scaife Hall
Pittsburgh, PA 15261
412-648-8957
Fax: 412-648-1077
E-mail: MBSBinfo@medschool.pitt.edu
www.mbsb.pitt.edu

Program Director: James Conway (UPSOM) and Gordon Rule (CMU)
Admission Requirements and Procedures

Students with at least a baccalaureate degree in physics, chemistry, and mathematics or cellular and molecular biology are encouraged to apply. Admissions are based upon the student's academic record, GRE scores, letters of recommendation, previous research experience, written statement of interest, and a personal interview. Applicants who are citizens of countries where English is not the official language (and the Province of Quebec in Canada) are required to submit evidence of English Language proficiency by submitting the official results of the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). A minimum TOEFL score of 600 (paper) or 250 (computer) or 100 (iBT), or IELTS score of at least 7.00 is required for admission to the Program. We actively seek qualified applicants from underrepresented minorities and students with disabilities.

Additional information and a link to the online application can be found at http://www.mbsb.pitt.edu/index.php/apply-for-the-mbsb-program

Financial Assistance

All students receive complete financial support in the form of stipend, tuition, and health insurance.

Training Faculty

Dietrich School of Arts and Sciences Faculty

Course list

The curriculum stresses an interdisciplinary approach to learning and research in modern Molecular Biophysics and Structural Biology. Upon entering the program, each student is advised by a mentoring committee, explores research options through laboratory rotations, and then chooses a thesis advisor in the first year.

A list of available courses can be found at the following website: http://www.mbsb.pitt.edu/index.php/training/curriculum

Molecular Biophysics and Structural Biology, PhD

Degree Requirements

All students enter the Program in the fall session and after performing three rotations identify an advisor and area of research. Areas of research focus include: Macromolecular recognition; Virus, lipid and protein structure and interactions; Principles of protein structure and dynamics; Membrane proteins; Gene regulation and signaling; Cellular biophysics; Chemical structure and dynamics. Methodologies employed comprise NMR spectroscopy, X-ray crystallography, cryo electron microscopy, atomic force microscopy, mass spectrometry, infrared spectroscopy and computational molecular biology. Required coursework is completed during the first year. Students are required to complete the Comprehensive Exam by August 31 of their second year in the graduate program.

A minimum of 72 credits beyond the baccalaureate degree is required for the PhD degree. The 72 credits are completed by taking required and elective course work as well as dissertation research credits upon being admitted to candidacy.

Courses

- MSMBPH 2000 - LABORATORY RESEARCH ROTATIONS or
- MOLBPH 2000 - LABORATORY RESEARCH ROTATIONS - taken during the first fall, spring & summer term of the first year.
- INTBP 2000 - FOUNDTNS OF BIOMEDICAL SCIENCE - taken during the fall term of the first year
Advanced Elective Courses (6 Credits Total)

The courses taken here will be chosen on an individual basis based on the background and interests of the individual student. During the first year, the choice will be made by the student in consultation with the First Year Advisor or Dissertation Advisor. Upon proper approval, the elective courses can be taken either at the University of Pittsburgh (both the Dietrich School of Arts & Sciences and the School of Medicine) as well as Carnegie Mellon University.

Additional information on the core curriculum can be found at

http://www.mbsb.pitt.edu/index.php/training/curriculum

- MSMBPH 2000 - LABORATORY RESEARCH ROTATIONS OR
- MOLBPH 2000 - LABORATORY RESEARCH ROTATIONS - taken during the first fall, spring, and summer semester of the first year.

- BIOSC 2810 - MACROMOLECULAR STRUCTURE AND FUNCTION - taken during the first fall semester of the first year.

- MSMBPH 2001 - MOLECULAR BIOPHYSICS 1: STRUCTURE OR
- MOLBPH 2001 - MOLECULAR BIOPHYSICS 1: STRUCTURE - taken during the first fall semester of the first year.

- MSMBPH 2002 - MOLECULAR BIOPHYSICS 2: THEORY AND SIMULATION OR
- MOLBPH 2002 - MOLECULAR BIOPHYSICS 2: THEORY AND SIMULATION - taken during the first spring semester of the first year.

- INTBP 2290 - SCIENTIFIC ETHICS AND THE RESPONSIBLE CONDUCT OF RESEARCH - taken during the first summer semester of the first year.

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1 - taken during the first summer semester of the first year.

- MSMBPH 2020 - STRUCTURAL BIOLOGY/MOLECULAR BIOLOGY SEMINAR OR
- MOLBPH 2020 - STRUCTURAL BIOLOGY/MOLECULAR BIOPHYSICS SEMINAR - taken every fall and spring semester through graduation.
Advanced Elective Courses-6 credits total-with the permission of his/her advisor, students are permitted to choose from a number of courses offered at Pitt as well as CMU.

Additional Information

Terminal Masters Degree
The program does not admit students whose goal is to attain a Master's of Science degree. However, it might become necessary for a PhD student to transfer to an MS track for academic reasons or reasons beyond the student's control, e.g., medical circumstances or a change in family circumstances necessitating a long-distance move.

Department of Music

The Department of Music offers the degrees of Master of Arts and Doctor of Philosophy in music.

The graduate program in music consists of four areas of concentration:

- Musicology
- Ethnomusicology
- Composition and Theory
- Jazz Studies

Students may combine work for the MA and PhD degrees with a program of theoretical, historical, or area studies specialization leading to a certificate in Cultural Studies, Medieval and Renaissance Studies, Global Studies, Asian Studies, Latin American Studies, European Union Studies, West European Studies, Russian and East European Studies, Film Studies or Gender, Sexuality, and Women's Studies.

Contact Information

Department Chair: Deane Root
Main Office: 110 Music Building
412-624-4126
Fax: 412-624-4186
E-mail: musicdpt@pitt.edu, music.grad.info@pitt.edu
www.music.pitt.edu

Admissions inquiries concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Music, Director of Graduate Admissions, Dr. Amy Williams, 110 Music Building, Pittsburgh, PA 15260. Phone: 412-624-4120. Fax: 412-624-4186. E-mail: amYWILL@pitt.edu

Admissions

The deadline for receipt of all elements of the application is January 5.

Prospective students should apply online by filling out the online application form (app.applyyourself.com/AYApplicantLogin/fl_ApplicantLogin.asp?id=up-as), paying the application fee and attaching pdf files of the statement of purpose, transcripts, resume/CV and work samples. Applicants must include letters of recommendation with the online application. Please send all additional application materials (music scores, CDs, test scores) to:
The elements of the application are:

1. **Application form** and $50 application fee.

2. **Statement of purpose**, an essay of about two pages that describes the applicant's academic background and professional goals.

3. **Undergraduate and graduate transcripts** from all higher education institutions attended. These should be scanned and included with online application. Students will be required to forward official transcripts/translations at the time of matriculation (upon enrollment) to the Graduate School to clear transcript contingencies.

4. **CV or Resumé**.

5. **Three letters of recommendation**, preferably by persons who have taught the applicant in subjects related to the four research subdisciplines, rather than in performance lessons.

6. **Official scores of the general test of the Graduate Record Examination (GRE)**. Please note that international applicants from a country whose official language is not English are exempt from taking the GRE. All others are required to take the test (including international students who hold or will hold a degree from an English-language institution). Applicants are encouraged to take the test by November 1, if possible, so that scores can reach the department by January 5. For information, go to www.gre.org (http://www.gre.org). The University of Pittsburgh GRE code is 2927.

7. **Samples of work**. Applicants in historical musicology and ethnomusicology should submit two papers on an analytical, historical, or theoretical topic. Applicants in composition and theory should submit three scores and a CD of recent compositions, together with one paper on an analytical or theoretical topic. Applicants in jazz studies should submit a recording that demonstrates their ability to improvise on an original jazz composition and a jazz standard. They should also send a full score of an original work for a large jazz ensemble/orchestra and a full score of an original or standard composition for a small jazz ensemble (up to 9 players). Finally, they should submit a research paper on a style or period in the history of jazz. **Please note**: papers can be submitted online. However, in order to submit two papers, both must be merged into a single pdf document first and then submitted.

8. **TOEFL or IELTS Exam scores**. International applicants whose country's official language is not English must submit certified scores of one of these exams. A minimum TOEFL score of 90 (with at least a score of 22 in all of the four sections of speaking, listening, reading and writing) is required. The required minimum IELTS score is 7.0 (with at least 6.5 in each of its four sections).

For information on music department admissions, contact the department's Director of Graduate Admissions, Professor Mathew Rosenblum (rosenblu@pitt.edu). More general information can be found on the University Graduate Admissions (http://www.asgraduate.pitt.edu/applicationadmission) and the Graduate Studies (http://www.asgraduate.pitt.edu) home pages.

International students are urged to consult the website of the Office of International Services (http://www.ois.pitt.edu).

**Financial Assistance**

A graduate student receiving a fellowship or teaching assistantship/teaching fellowship from the University of Pittsburgh who maintains satisfactory progress toward the degree can expect to receive up to four years of financial aid; continuing students must request renewal of financial assistance for the following year no later than February 15. Students who have successfully passed the PhD comprehensive examinations in their fourth year may receive additional financial assistance if there are adequate funds. The department nominates the most outstanding candidates for University- and school-wide fellowships. Students seeking financial assistance must request consideration for aid at the time of application for admission; admission by itself carries no commitment of financial assistance.

**Faculty**

Dietrich School of Arts and Sciences Faculty

**Music - Composition and Theory Concentration, PhD**
Requirements for the PhD:

_Credit Requirement:_ A minimum of 72 credit hours, including the master's degree, earned from any suitable combination of formal course work, independent study, and dissertation work as detailed in the department's Graduate Handbook which can be downloaded at www.music.pitt.edu/graduate.

The University will accept up to 24 transfer credits for graduate courses comparable in scope and content to those required by the department, as judged by the department's Director of Graduate Studies.

PhD candidates must also satisfy the following requirements (distinctions between the various program requirements are detailed):

**Language Requirement:** For Musicology, reading knowledge of German and one other research language besides English. For Ethnomusicology and Jazz Studies, reading knowledge of a language relevant to the field of specialization and chosen in consultation with the department's Director of Graduate Studies. For Composition and Theory, reading knowledge of one language besides English, chosen in consultation with the department's Director of Graduate Studies.

**First Year Evaluation:** At the end of the first year of graduate study all first-year students meet with the faculty at a regularly scheduled faculty meeting for an oral interview/evaluation of their progress in the program.

**Preliminary Evaluation:** The faculty formally evaluates each student in the first year in residence beyond the master's degree, to identify those students who may be expected to complete the PhD degree and to reveal areas of weakness in their preparation that need to be remedied.

**Comprehensive Examination:** Students take a written comprehensive examination normally during the third year at the completion of their formal course work. The examination in Musicology covers the history of Western music and musical analysis; in Ethnomusicology it covers the intellectual history, theory, and methodologies used in the field, as well as topics in the students' geocultural areas of interest; in Jazz Studies it covers jazz literature and history, performance, and jazz composition and analysis; in Composition and Theory it covers tonal and atonal analysis, 20th and 21st -century musical language, and orchestration.

**Dissertation Overview:** Following successful completion of the comprehensive examination, students prepare a written prospectus of the dissertation project for review by their dissertation committee. Approval of the overview brings admission to candidacy for the PhD degree.

**Dissertation:** Candidates in Musicology and Ethnomusicology submit a major work of original scholarship. Candidates in Jazz Studies submit a major work of original scholarship and produce a one-hour recital of original compositions. Candidates in Composition and Theory submit a large-scale composition and work of original scholarship in music theory.

**Dissertation Defense:** The final oral examination in defense of the doctoral dissertation is conducted by the dissertation committee and is open to the University community.

### Music - Ethnomusicology Concentration, PhD

Requirements for the PhD:

_Credit Requirement:_ A minimum of 72 credit hours, including the master's degree, earned from any suitable combination of formal course work, independent study, and dissertation work as detailed in the department's Graduate Handbook which can be downloaded at www.music.pitt.edu/graduate.

The University will accept up to 24 transfer credits for graduate courses comparable in scope and content to those required by the department, as judged by the department's Director of Graduate Studies.

PhD candidates must also satisfy the following requirements (distinctions between the various program requirements are detailed):

**Language Requirement:** For Musicology, reading knowledge of German and one other research language besides English. For Ethnomusicology and Jazz Studies, reading knowledge of a language relevant to the field of specialization and chosen in consultation with the department's Director of Graduate Studies. For Composition and Theory, reading knowledge of one language besides English, chosen in consultation with the department's Director of Graduate Studies.
First Year Evaluation: At the end of the first year of graduate study all first-year students meet with the faculty at a regularly scheduled faculty meeting for an oral interview/evaluation of their progress in the program.

Preliminary Evaluation: The faculty formally evaluates each student in the first year in residence beyond the master's degree, to identify those students who may be expected to complete the PhD degree and to reveal areas of weakness in their preparation that need to be remedied.

Comprehensive Examination: Students take a written comprehensive examination normally during the third year at the completion of their formal course work. The examination in Musicology covers the history of Western music and musical analysis; in Ethnomusicology it covers the intellectual history, theory, and methodologies used in the field, as well as topics in the students' geocultural areas of interest; in Jazz Studies it covers jazz literature and history, performance, and jazz composition and analysis; in Composition and Theory it covers tonal and atonal analysis, 20th and 21st century musical language, and orchestration.

Dissertation Overview: Following successful completion of the comprehensive examination, students prepare a written prospectus of the dissertation project for review by their dissertation committee. Approval of the overview brings admission to candidacy for the PhD degree.

Dissertation: Candidates in Musicology and Ethnomusicology submit a major work of original scholarship. Candidates in Jazz Studies submit a major work of original scholarship and produce a one-hour recital of original compositions. Candidates in Composition and Theory submit a large-scale composition and work of original scholarship in music theory.

Dissertation Defense: The final oral examination in defense of the doctoral dissertation is conducted by the dissertation committee and is open to the University community.

Music - Jazz Studies Concentration, PhD

Requirements for the PhD:

Credit Requirement: A minimum of 72 credit hours, including the master's degree, earned from any suitable combination of formal course work, independent study, and dissertation work as detailed in the department's Graduate Handbook which can be downloaded at www.music.pitt.edu/graduate.

The University will accept up to 24 transfer credits for graduate courses comparable in scope and content to those required by the department, as judged by the department's Director of Graduate Studies.

PhD candidates must also satisfy the following requirements (distinctions between the various program requirements are detailed):

Language Requirement: For Musicology, reading knowledge of German and one other research language besides English. For Ethnomusicology and Jazz Studies, reading knowledge of a language relevant to the field of specialization and chosen in consultation with the department's Director of Graduate Studies. For Composition and Theory, reading knowledge of one language besides English, chosen in consultation with the department's Director of Graduate Studies.

First Year Evaluation: At the end of the first year of graduate study all first-year students meet with the faculty at a regularly scheduled faculty meeting for an oral interview/evaluation of their progress in the program.

Preliminary Evaluation: The faculty formally evaluates each student in the first year in residence beyond the master's degree, to identify those students who may be expected to complete the PhD degree and to reveal areas of weakness in their preparation that need to be remedied.

Comprehensive Examination: Students take a written comprehensive examination normally during the third year at the completion of their formal course work. The examination in Musicology covers the history of Western music and musical analysis; in Ethnomusicology it covers the intellectual history, theory, and methodologies used in the field, as well as topics in the students' geocultural areas of interest; in Jazz Studies it covers jazz literature and history, performance, and jazz composition and analysis; in Composition and Theory it covers tonal and atonal analysis, 20th and 21st century musical language, and orchestration.

Dissertation Overview: Following successful completion of the comprehensive examination, students prepare a written prospectus of the dissertation project for review by their dissertation committee. Approval of the overview brings admission to candidacy for the PhD degree.
**Dissertation:** Candidates in Musicology and Ethnomusicology submit a major work of original scholarship. Candidates in Jazz Studies submit a major work of original scholarship and produce a one-hour recital of original compositions. Candidates in Composition and Theory submit a large-scale composition and work of original scholarship in music theory.

**Dissertation Defense:** The final oral examination in defense of the doctoral dissertation is conducted by the dissertation committee and is open to the University community.

**Music, PhD**

**Requirements for the PhD:**

**Credit Requirement:** A minimum of 72 credit hours, including the master's degree, earned from any suitable combination of formal course work, independent study, and dissertation work as detailed in the department's Graduate Handbook which can be downloaded at www.music.pitt.edu/graduate.

The University will accept up to 24 transfer credits for graduate courses comparable in scope and content to those required by the department, as judged by the department's Director of Graduate Studies.

PhD candidates must also satisfy the following requirements (distinctions between the various program requirements are detailed):

**Language Requirement:** For Musicology, reading knowledge of German and one other research language besides English. For Ethnomusicology and Jazz Studies, reading knowledge of a language relevant to the field of specialization and chosen in consultation with the department's Director of Graduate Studies. For Composition and Theory, reading knowledge of one language besides English, chosen in consultation with the department's Director of Graduate Studies.

**First Year Evaluation:** At the end of the first year of graduate study all first-year students meet with the faculty at a regularly scheduled faculty meeting for an oral interview/evaluation of their progress in the program.

**Preliminary Evaluation:** The faculty formally evaluates each student in the first year in residence beyond the master's degree, to identify those students who may be expected to complete the PhD degree and to reveal areas of weakness in their preparation that need to be remedied.

**Comprehensive Examination:** Students take a written comprehensive examination normally during the third year at the completion of their formal course work. The examination in Musicology covers the history of Western music and musical analysis; in Ethnomusicology it covers the intellectual history, theory, and methodologies used in the field, as well as topics in the students' geocultural areas of interest; in Jazz Studies it covers jazz literature and history, performance, and jazz composition and analysis; in Composition and Theory it covers tonal and atonal analysis, 20th and 21st-century musical language, and orchestration.

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**Dissertation Defense:** The final oral examination in defense of the doctoral dissertation is conducted by the dissertation committee and is open to the University community.

**Music - Composition and Theory Concentration, MA**

**Requirements for the MA:**

All students must apply to and be admitted to the PhD program. Those who do not hold a Master's degree will first complete the necessary requirements for the MA. For the master's degree, students must earn 30 credits with a B average or better in courses numbered 2000 or above, and write a thesis (if required); the University will accept up to six transfer credits for courses comparable in scope and content to those required by the
department, as judged by the department's Director of Graduate Studies. All entering graduate students enroll in at least four out of five available proseminars (MUSIC 2111, MUSIC 2121, MUSIC 2131, MUSIC 2141, MUSIC 2151) providing perspectives for scholarly research in the field as a whole and in the disciplines represented within the department. Much of the remainder of the MA curriculum consists of more specialized required and elective courses that are specified for each discipline, e.g., Orchestration, Electronic and Computer Music, and private tutorials in composition and analysis for students in Composition and Theory; Field and Lab, area courses and seminars for Ethnomusicology; Introduction to Jazz Literature, Advanced Jazz Composition and Analysis for Jazz Studies; and topical seminars for Musicology. Students in Musicology must demonstrate a reading knowledge of a second research language.

**Music - Ethnomusicology Concentration, MA**

Requirements for the MA:

All students must apply to and be admitted to the PhD program. Those who do not hold a Master's degree will first complete the necessary requirements for the MA. For the master's degree, students must earn 30 credits with a B average or better in courses numbered 2000 or above, and write a thesis (if required); the University will accept up to six transfer credits for courses comparable in scope and content to those required by the department, as judged by the department's Director of Graduate Studies. All entering graduate students enroll in at least four out of five available proseminars (MUSIC 2111, MUSIC 2121, MUSIC 2131, MUSIC 2141, MUSIC 2151) providing perspectives for scholarly research in the field as a whole and in the disciplines represented within the department. Much of the remainder of the MA curriculum consists of more specialized required and elective courses that are specified for each discipline, e.g., Orchestration, Electronic and Computer Music, and private tutorials in composition and analysis for students in Composition and Theory; Field and Lab, area courses and seminars for Ethnomusicology; Introduction to Jazz Literature, Advanced Jazz Composition and Analysis for Jazz Studies; and topical seminars for Musicology. Students in Musicology must demonstrate a reading knowledge of a second research language.

**Music - Jazz Studies Concentration, MA**

Requirements for the MA:

All students must apply to and be admitted to the PhD program. Those who do not hold a Master's degree will first complete the necessary requirements for the MA. For the master's degree, students must earn 30 credits with a B average or better in courses numbered 2000 or above, and write a thesis (if required); the University will accept up to six transfer credits for courses comparable in scope and content to those required by the department, as judged by the department's Director of Graduate Studies. All entering graduate students enroll in at least four out of five available proseminars (MUSIC 2111, MUSIC 2121, MUSIC 2131, MUSIC 2141, MUSIC 2151) providing perspectives for scholarly research in the field as a whole and in the disciplines represented within the department. Much of the remainder of the MA curriculum consists of more specialized required and elective courses that are specified for each discipline, e.g., Orchestration, Electronic and Computer Music, and private tutorials in composition and analysis for students in Composition and Theory; Field and Lab, area courses and seminars for Ethnomusicology; Introduction to Jazz Literature, Advanced Jazz Composition and Analysis for Jazz Studies; and topical seminars for Musicology. Students in Musicology must demonstrate a reading knowledge of a second research language.

**Music - Musicology Concentration, MA**

Requirements for the MA:

All students must apply to and be admitted to the PhD program. Those who do not hold a Master's degree will first complete the necessary requirements for the MA. For the master's degree, students must earn 30 credits with a B average or better in courses numbered 2000 or above, and write a thesis (if required); the University will accept up to six transfer credits for courses comparable in scope and content to those required by the department, as judged by the department's Director of Graduate Studies. All entering graduate students enroll in at least four out of five available proseminars (MUSIC 2111, MUSIC 2121, MUSIC 2131, MUSIC 2141, MUSIC 2151) providing perspectives for scholarly research in the field as a whole and in the disciplines represented within the department. Much of the remainder of the MA curriculum consists of more specialized required and elective courses that are specified for each discipline, e.g., Orchestration, Electronic and Computer Music, and private tutorials in composition and analysis for students in Composition and Theory; Field and Lab, area courses and seminars for Ethnomusicology; Introduction to Jazz Literature,
Advanced Jazz Composition and Analysis for Jazz Studies; and topical seminars for Musicology. Students in Musicology must demonstrate a reading knowledge of a second research language.

**Department of Neuroscience**

The Center for Neuroscience (CNUP) Training program is an interschool PhD degree-granting program offered cooperatively by the School of Arts and Sciences (Neuroscience, NROSCI) and the School of Medicine (Neurobiology, MSNBIO). The program introduces students to the fundamental issues and experimental approaches in neuroscience and trains them in the theory and practice of laboratory research. Research interests of the training faculty focus on several prominent themes, including behavioral/systems/cognitive, cell and molecular, development/plasticity/repair, and the neurobiology of disease.

This large research-based training program offers outstanding opportunities for students to pursue research in laboratories within more than 30 different departments and University centers. Major features of the program include extensive collaborative interactions among its faculty members and its affiliation with Auditory Neuroscience, the Brain Institute, the Center for the Neural Basis of Cognition (a joint program with Carnegie Mellon University), Conte Center for Translational Mental Health Research, Pittsburgh Hearing Research Center, Pittsburgh Institute for Neurodegenerative Diseases, Pittsburgh Center for Pain Research, and other on-campus research centers.

Training is also available for a master's degree through the Department of Neuroscience in the Dietrich School of Arts and Sciences. It is important to note that this is a departmental program rather than a component of CNUP. Thus, training is only available with faculty with primary or secondary appointments in the Department of Neuroscience. Applicants must also arrange for a faculty sponsor before their application will be considered. A more detailed explanation of the program requirements is available on the Department of Neuroscience Web site at http://neuroscience.pitt.edu/programs/masters-program.

**Contact Information**

Center for Neuroscience  
A206 Langley Hall  
Fifth and Ruskin Avenues  
Pittsburgh, PA 15260  
412-383-7582  
Fax: 412-624-9198  
E-mail: lms232@pitt.edu  
http://cnup.pitt.edu  
Email: lms232@pitt.edu

**Admission Requirements and Procedures**

Students are admitted into the CNUP training program on the assumption that they will be able to meet all requirements for the PhD degree. Those that are selected show evidence of a high level of intellectual talent, a strong interest in neuroscience, and a commitment to scholarship and research.

Admission decisions are based on many factors including the candidate's statement of interest and goals in the field of neuroscience, evidence of research experience and accomplishment, letters of recommendation, test scores, grades, and personal interviews. An outstanding record in one of these areas may compensate for poorer performance in another area. In general, successful applicants have a BS degree in biology, chemistry, computer science, mathematics, neuroscience, or psychology with a cumulative grade point average of at least 3.40 (on a 4.00 scale) and a cumulative Graduate Record Exam (GRE) score greater than 160 verbal, 155 quantitative and a 4.5 in analytical writing.

Additional information and a link to our on-line application can be found at: http://www.cnup.pitt.edu/training/phd-program.

**Financial Assistance**

All students receive full stipend support and individual health benefits. This support is derived from University fellowships and numerous grants funded by the federal government and private agencies. Students in the program also have access to sponsorship on NIH training grants.
Training Faculty

Dietrich School of Arts and Sciences Faculty

Neuroscience, PhD

Degree Requirements

http://www.cnup.pitt.edu/training/phd-program/phd-program-requirements

Credits: A minimum of 72 credit hours, including a 23-credit course requirement covering fundamental material in cellular and molecular neurobiology, systems neuroscience, and several elective courses.

Core Courses

The following core courses are required.

- MSNBIO 2010 - SCIENTIFIC ETHICS OR
- NROSCI 2010 - SCIENTIFIC ETHICS
- MSNBIO 2100 - CELLULAR AND MOLECULAR NEUROBIOLOGY 1 OR
- NROSCI 2100 - CELLULAR AND MOLECULAR NEUROBIOLOGY 1
- MSNBIO 2101 - CELLULAR & MOLECULAR NEUROBIOLOGY 2 OR
- NROSCI 2101 - CELLULAR & MOLECULAR NEUROBIOLOGY 2
- MSNBIO 2102 - SYSTEMS NEUROBIOLOGY OR
- NROSCI 2102 - SYSTEMS NEUROBIOLOGY
- MSNBIO 2624 - GRANT WRITING

Additional Information

In addition to University requirements for graduate degrees, students are also required to complete a graduate level statistics course, obtain research experience in at least two separate laboratories; attend journal clubs and research seminars; pass a reprint exam following their first year of study, a comprehensive exam, and a doctoral dissertation and defense; and, to serve as a teaching assistant for at least one term (or course).

A list of CNUP Training Faculty may be viewed at: Dietrich School of Arts and Sciences Faculty

A complete list of courses may be viewed at: http://www.cnup.pitt.edu/graduate-course-list

Neuroscience, MS

The following sections outline the academic courses, the research experiences, and the oral and written examinations (herein referred to as "milestones") that the student must successfully complete prior to being awarded the master's degree. These requirements are described in terms of the academic and research accomplishments expected during each year of the student's progress through the program. Deviations from the outlined sequence and time schedule need to be approved by the Chair of the Graduate Advising Committee.

MS Degree Requirements
Credits: A minimum of 24 credit hours, including 12 credit hours of graduate course work in courses numbered 2000 or above.

- NROSCI 2102 - SYSTEMS NEUROBIOLOGY
- OR
- NROSCI 2101 - FUNCTIONAL NEUROANATOMY

AND

- NROSCI 2100 - CELLULAR AND MOLECULAR NEUROBIOLOGY 1
- NROSCI 2101 - CELLULAR & MOLECULAR NEUROBIOLOGY 2
- OR
- NROSCI 2012 - NEUROPHYSIOLOGY
- NROSCI 2017 - SYNAPTIC TRANSMISSION

- A graduate-level course in statistics also is strongly recommended though not required

Additional

Students must also participate in a journal club every fall and spring term (this could be either a CNUP journal club or a more specialized journal club), and must attend the neuroscience seminar series (NROSCI 2106). A minimum grade of B is required to pass a course, and a cumulative grade point average of at least 3.0 must be maintained throughout the course of study.

Students must complete at least 12 credit hours of coursework toward the total of 30 credits required for the master's degree. Course credits completed before admission to the Department of Neuroscience Master's Degree program cannot be applied to the credit hour requirements required for the master's degree, although prior coursework may satisfy specific course requirements.

Students are also required to pass two milestones en route to the master's degree: the Reprint Exam and the Master's Thesis Defense. Specific details regarding these milestones are provided later in this document.

Yearly Sequence of Requirements and Expectations

Entering Students

Entering students should schedule an introductory meeting with the Chair of the Graduate Advising Committee (currently Dr. J. Patrick Card). The purpose of this meeting is to answer any questions that the student may have and to assist the student in getting settled in the program. Prior to the beginning of the student's first term, the student, with the aid of their research mentor and the Chair of the Graduate Advising Committee, outlines a complete plan of study leading to the Master's Degree.

First Year

The major objectives of the first year are to become actively engaged in laboratory research, to complete core course requirements, and to obtain sufficient experience to pass the Reprint Exam. Participation in journal clubs, research seminars, and involvement in critical assessment of the literature through readings with the mentor and peers is integral to meeting these objectives.

It is required that students participate in the following activities during the fall and spring terms of their first year:

1. laboratory research
2. core courses in neuroscience
3. journal club
4. neuroscience seminar series.

During the summer term at the end of their first year, students should focus primarily on research, although some coursework may be appropriate (e.g., statistics). During the first year, the students typically register for 3-9 research credits of Directed Study (NROSCI 2902) per term; the students should register for this course pass/fail.
Students are required to submit a research progress report at the end of the first year of study. This report is due by the last day of final exam week of the second term.

The Reprint Exam (see Section 9.1) must be completed by May 31 of the first year of study.

This assumes that the student initiated study in the program at the beginning of the fall term. Because admission into the program is considered on a rolling basis, it is not unusual for students to enter the program in the spring or summer terms. In these instances, completion of the reprint examination should take place at the end of the first month following the second term of study.

Second Year

After completion of the first year, the only remaining requirements are to finish course requirements and complete a master's thesis project. A list of elective courses currently offered can be obtained from the administrative office. Selection of the coursework that will be used to satisfy the requirements of the program should be made in consultation with their mentor and is subject to approval by the Director of Graduate Studies. However, given the time constraints of completing the degree it is expected that research will be the principal focus of students throughout their program of study.

During each fall and spring term the student is enrolled in the program, the student must participate in:

1. research (registered for as 6-9 credits, NROSCI 2990, pass/fail)
2. journal club
3. neuroscience seminar series (NROSCI 2106).

Department of Philosophy

The Department of Philosophy offers the degrees of Master of Arts and Doctor of Philosophy.

It is possible for students in the Department of Philosophy to plan a combined program with the Department of History and Philosophy of Science by fulfilling specific requirements in each of the departments. The Departments of Classics, Philosophy, and History and Philosophy of Science jointly offer a graduate program leading to the MA and PhD degrees with an area of concentration in classics, philosophy, and ancient science.

Contact Information

Department Chair: Robert Batterman
Main Office: 1017 Cathedral of Learning
412-624-5775
Fax: 412-624-5377
E-mail: kathleenlabuda@pitt.edu
http://www.philosophy.pitt.edu/

Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Philosophy, Graduate Administrator, 1017 Cathedral of Learning, Pittsburgh, PA 15260. Phone: 412-624-5774. Fax: 412-624-5377. E-mail: kathleenlabuda@pitt.edu.

Admissions

Applicants for admission must submit transcripts of all college-level work, three letters of recommendation, a statement of purpose, a writing sample, and scores on the verbal, quantitative, and writing assessment-analytical sections of the Graduate Record Examination. International applicants whose first language is not English are required to submit either the TOEFL administered by the Educational Testing Service or the IELTS administered by the University of Cambridge, Local Examination Syndicate. The required minimum TOEFL score is 90 (with at least a score of 22 in all of the four sections of speaking, listening, reading, and writing). The required minimum IELTS score 7.0 (with at least 6.5 in each of its four sections). Applications will be accepted for fall term admission until January 10. The department admits students only for the fall term.
Financial Assistance

Many students in the PhD program are supported by fellowships or teaching assistantships/fellowships. The rates are set annually by the University. The department does not offer financial support to non-continuing MA students.

Faculty

Dietrich School of Arts and Sciences Faculty

Philosophy, PhD

Requirements for the PhD

The University requirement for the PhD is 72 credits. The department requires that 36 of these credits must be obtained by taking 12 seminars (including directed studies) offered by the philosophy department (or an approved seminar offered by another department) passed with a grade of at least B, and the remainder are typically satisfied by dissertation research.

Departmental requirements are fully spelled out in the Handbook of Rules and Policies for Graduate Study in Philosophy at the University of Pittsburgh (PDF). In summary, these requirements include:

1. proficiency in French, German, Greek, or Latin, shown by passing a departmental translation examination
2. proficiency in basic and advanced logic, normally shown by passing (with a grade of at least B) PHIL 2500
3. proficiency in ethics, metaphysics and epistemology, and philosophy of science
4. proficiency in the history of philosophy, shown by doing three units, where a unit is a graduate seminar or departmental examination covering a historical topic

When these requirements have been satisfied, the student is comprehensively evaluated and starts working on a paper to serve as the basis for comprehensive examination, which is the student is expected to take by the end of his or her seventh term. Students who pass this examination are then allowed to form a dissertation committee and to present this committee a prospectus for a dissertation. If the prospectus is approved, the student is admitted to Ph.D. candidacy and proceeds to writing the dissertation. Once the dissertation is approved for examination, the student must pass a final oral exam on the dissertation and their research.

Teaching Internship

In order to qualify for the PhD, each graduate student must, under the supervision of the faculty, teach or lead discussion sections for at least two different courses. Teaching assistants and teaching fellows satisfy this requirement in the course of fulfilling their teaching duties. Special arrangements are made to enable other graduate students to satisfy this requirement.

Philosophy, MA

M.A. in Philosophy

The department has no regular terminal M.A. program. Except in extraordinary circumstances, students working towards an M.A. in Philosophy are Ph.D. students in other departments at the University who are seeking a "secondary M.A." All M.A. students are supervised by the Director of Graduate Studies and must satisfy the following requirements:

A. The student must satisfy the Area Requirement in the field of metaphysics and/or epistemology, and in addition one of the other Area Requirements (i.e. either ethics or the philosophy of science), as described in §3.3 of this Handbook. These requirements may (but need not) be satisfied by taking the core courses for Ph.D. students (described in section 3.4 of this Handbook). But M.A. students may not the M&E Core Seminar in the Fall term: courses in the Core Sequence are open to M.A. students only in the spring term.
B. The student must do at least two units of history (where a "unit" is defined in §3.5 of this Handbook), such that one is in ancient philosophy and the other in modern/nineteenth century philosophy.

C. The student must either pass the Basic Logic Exam or Phil 1500 (or a more advanced logic course), as described in §3.1 of this Handbook.

There is also a Course-Number Requirement, parallel to that described in §3.6 of the Handbook: i.e., the student must pass (with a grade of B or better) at least 10 courses (30 credits) offered by the Department, of which at least 6 courses (18 credits) must be 2000-level or 3000-level, and no more than four may be at the 1000-level. (Neither Directed nor Independent studies may count.) None of the courses used to fulfill these requirements can be among those used to fulfill requirements for another degree. All requirements for the M.A. degree should be completed within a period of four calendar years from the student's initial registration for graduate study.

When these requirements have been met, the student will be comprehensively evaluated by the Department and, if the evaluation is favorable, the Department will recommend the conferral of the M.A. degree. Students must register for at least one credit in the term of graduation and be registered for a minimum of three credits in the 12-month period preceding the graduation month. Note that the M.A. degree is only conferred upon students with an overall QPA of 3.0 or higher.

**Secondary M.A. Programs in other departments**

A secondary M.A. in philosophy is available to a student enrolled in a Ph.D. program in another department at the University. The student must satisfy requirements (A)-(C) and the Course-Number Requirement described in §8.1 of the Handbook. Note that none of the courses used to fulfill these requirements can be among those used for residence requirements for the student's "home" degree. When these requirements have been met, the student will be comprehensively evaluated by the Department and, if the evaluation is favorable, the Department will recommend conferral of the M.A. degree. The Department waives its Language Requirement and defers responsibility for residency and other University requirements to the student's "home" department.

Students enrolled in the regular Ph.D. program in the Department may pursue a secondary M.A. degree in other departments at the University. If the secondary M.A. would contribute significantly to the student's philosophical training, or form an integral part of their projected dissertation project, the student may submit a written request to the Graduate Committee that his or her pursuit of the secondary M.A. be officially endorsed by the Department. The Graduate Committee, with the approval of the Chair, may endorse the student's secondary M.A. in which case an additional year of financial support by the Department will be granted, and the timing of requirements will be appropriately adjusted.

**Department of Physics and Astronomy**

The Department of Physics and Astronomy offers the MS and PhD degrees in physics. The graduate program provides a broad experimental, observational, and theoretical foundation upon which students build careers as scientists prepared for both teaching and research at major academic, government and industrial laboratories, educators at universities and colleges, and as independent scientific entrepreneurs.

**Contact Information**

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www.physicsandastronomy.pitt.edu

**Research**

The graduate programs in the Department of Physics and Astronomy are designed primarily for students who wish to obtain the PhD degree, although the MS degree is also offered without financial support. Both the PhD and the MS programs provide high-quality training for students. A set of core courses is to be taken by all graduate students unless the core course material has been demonstrably mastered in other ways. These core courses cover dynamical systems, electromagnetic theory, mathematical methods, quantum mechanics, and statistical physics & thermodynamics. In addition, elective courses are offered in several advanced areas of physics. PhD thesis topics may be chosen from a variety of research fields, including astrophysics/cosmology, condensed matter physics, particle physics, and physics education research. Topics in astrophysics/cosmology...
include: observational, numerical, and theoretical cosmology; dark matter and dark energy; galaxy formation and evolution; active galactic nuclei and quasars; galactic and intergalactic medium; stellar atmospheres; massive stars; supernovae; and physics of the early universe. Topics in condensed matter physics include: biological physics; nanoscience; quantum information; quantum kinetics; quantum optics; quantum states of matter; semiconductor physics; soft condensed matter physics; statistical physics; superconductivity and superfluidity; and ultrafast optics. Topics in particle physics include: the origin of mass and flavor; the search for new symmetries of nature; neutrino physics; CP violation; heavy quarks; leptoquarks; supersymmetry; extra dimensions; baryogenesis; effective field theory; and strong interaction field theory. Topics in physics education research include: cognitive issues in learning physics; and development and evaluation of research-based curricula for introductory and advance physics courses. Multidisciplinary thesis research may also be carried out in, for example, particle astrophysics, biophysics, chemical physics, laser physics, materials science, nanoscience, and surface science. This research may be done in cooperation with faculty from other departments of the University.

Admissions

To be considered for admission, a student must have earned a baccalaureate degree; one of the physical sciences, mathematics, astronomy/astrophysics or engineering with relevant physics courses is required. Research experience is recommended but not required. Must have an impressive undergraduate record; and must submit a complete application. The application also serves as an application for financial aid from the department, if the candidate so desires. A complete application consists of the following. Application details are provided on our website under "How to Apply".

- An online application
  - Transcripts (clear downloads) from all college-level institutions attended (unofficial until admitted)
  - Proof of degree(s) either posted on the transcript or in another form
- Minimum GPA for admission with full status is 3.0 on a 4.0 scale
- Graduate Record Examination (GRE) scores General (currently required, check website for any changes) and Advanced Physics test (recommended)
- Brief statement of purpose, including rank ordered list of research preferences; in addition to list of textbooks used for physics class
- Evidence of any research experience (recommended but not required)
- Curriculum Vitae (optional)
- Three letters of recommendation
- International applicants only: TOEFL (Test of English as a Foreign Language) or IELTS scores and completed Certification of Financial Responsibility and International Graduate Student Supplemental Form for the Dietrich School of Arts and Sciences (Refer to department's graduate application details website for minimum score information)

Financial Aid

Financial aid is normally provided to graduate students through teaching or research assistantships. In addition, numerous competitive fellowships are available for students. All qualified applicants are entered into a pool for these fellowships. The department endeavors to support all students throughout their entire graduate career, provided good academic standing is maintained and progress is being made toward the degree.

Faculty

Dietrich School of Arts and Sciences Faculty

Physics, PhD

Requirements for the Doctor of Philosophy

The PhD program in physics, described in more detail in the referenced documents, aims to assure that graduates are well versed in the fundamentals of their fields, have a broad knowledge of contemporary developments, and are experts in the techniques and current state of the subject area of their research. Students are required to complete the six core courses (PHYS 2373, PHYS 2513, PHYS 2541, PHYS 2555, PHYS 2565, PHYS 2566) within the first two years of their program. Students entering with a Masters degree from another institution are encouraged to review Section A.5 of the departmental requirements document. At least four classes numbered above 3000 are also required for the degree. Teaching practice, presentation
and attendance of seminars, and writing and an oral presentation of a dissertation give candidates broad experience in the effective communication of their work.

A minimum of 72 graduate credits are required for the PhD degree.

The PhD preliminary evaluation, which also serves as the comprehensive examination for the MS, is based on final examination scores in the core graduate and/or advanced undergraduate subjects. All students are required to pass the preliminary examination by the end of the first year.

PhD students are also required to complete the PhD comprehensive examination, which is based on final examination scores in the core graduate courses. This examination should be passed within the first two years of residency. Students who were exempted from a particular core course are required to take the final examination in that course.

The PhD dissertation research, a major part of the PhD program, must contribute significantly to the advancement of knowledge in physics or astronomy. Students will be required to meet annually with their thesis committee and successfully defend their dissertation before this committee and the University community.

**Physics, MS**

**Requirements for the Master of Science**

A minimum of 30 credits (3.0 GPA) is required for the MS for both thesis and non-thesis options. The student must be in compliance with all of the University's degree requirements. At least four physics courses (12 credits) at the graduate 2000-level must be completed with a grade of B (3.00). A 3000-level course can be substituted for one of these, but only with the Academic Advisor's approval. At most, up to 12 credits of 1300-level undergraduate coursework listed in the "Advising" section of this document as acceptable for graduate credit may also be used to satisfy the department’s 30-credit requirement. No more than six credits of graduate work completed at another institution may be accepted by the Graduate Committee toward the completion of the residence requirement. Credits earned for PHYS 2997 and PHYS 2998 may not be used to satisfy this requirement. No more than two non-physics graduate-level courses, approved in advance by the Director of Graduate Studies, will be considered for credit for the MS degree. Please refer to department's graduate website for details about the course and thesis options for this degree.

**Department of Political Science**

**Contact Information**

Department Chair: Jonathan Woon  
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http://www.polisci.pitt.edu

Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Political Science, Graduate Administrator, 4601WWPH, Pittsburgh, PA 15260. Phone: 412-648-7270. Fax: 412-648-7277. E-mail: brd51@pitt.edu

**Graduate Program**

The Department of Political Science offers the degrees of Master of Arts and Doctor of Philosophy. However, the MA degree functions as a stepping-stone to the PhD. The department does not have a terminal MA program, and does not admit students for graduate study who seek a terminal Master of Arts degree. However, PhD students who, for various reasons, choose to discontinue their training after two years are eligible for a terminal MA, contingent upon the successful completion of the requirements outlined below.

The graduate program in political science incorporates six fields:
Students choose two of these fields as areas of specialization. Students may combine work for the MA and PhD degrees with a program of regional or global specialization leading to a certificate in Global Studies, Latin American studies, Asian studies, West European studies, or Russian and East European studies.

Admissions

Applicants for admission must submit transcripts of all college-level work, three letters of recommendation, a career statement, and scores on the verbal, quantitative, and writing assessment-analytical sections of the Graduate Record Examination. International applicants whose first language is not English are required to submit either the TOEFL administered by the Educational Testing or the IELTS administered by the University. For fall 2018 term admission and awards consideration, complete applications must be submitted by January 8. The department admits students only for the fall term.

Financial Assistance

Graduate students entering the program with a fellowship or teaching assistantship/teaching fellowship who have demonstrated high-quality graduate work and are maintaining good academic progress can expect to have financial aid renewed for up to five years. A graduate student who has not passed the PhD comprehensive examination in September of the fourth year of graduate work ordinarily is not eligible for additional financial assistance until these examinations are passed.

Faculty

Dietrich School of Arts and Sciences Faculty

Political Science, PhD

Requirements for the PhD

Credit Requirement: A minimum of 72 credit hours, including the master's degree, earned from any suitable combination of formal course work, independent study, research, teaching, or dissertation work as detailed elsewhere in this bulletin.

Students in the PhD program must choose two fields. The requirements for the first field are outlined above in the section regarding requirements for the MA. Unless otherwise stated below, students are required to complete at least four graduate seminars beyond the departmental core (PS 2000, PS 2010, PS 2030, and PS 2040) from one of the remaining five fields of study for their second field.

PhD Qualifying Examinations: At the conclusion of the first year, all students will face a "first year review" before the entire faculty. The faculty will review each student, based on his or her performance in the first year, to determine whether or not he or she should continue in the program. Students who have passed this review are considered to have passed the PhD Qualifying Examination.

Supervised Teaching Experience: Supervised teaching experience is an integral part of the doctoral program. Normally, teaching experience is gained by conducting recitation sections of an introductory course or by assisting a faculty member in an undergraduate course, followed by the teaching of one's own course, in the fourth or fifth year of study.

Comprehensive Examination: Students take a PhD comprehensive examination after approximately one year of coursework beyond the MA, comprising a written exam in both fields, with a possible oral exam if the results of the written exam are unclear.
**Dissertation Overview:** Following successful completion of the comprehensive examination, the student files an application for admission to candidacy for the Doctor of Philosophy degree. At this stage the student presents a proposed topic for doctoral research and a research design for its execution to be reviewed by the dissertation committee.

**Dissertation Defense:** The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and is open to the University community.

### Political Science, MA

#### Requirements for the MA

For the MA, students must earn 30 hours of credit with a B average or better in courses numbered 1000 or above. At least half of these credits must be carried in courses numbered 2000 or above. All MA students are required to complete a 13-credit core-course sequence in theory and methods (PS 2000, PS 2010, PS 2030, and PS 2040), comprising graduate-level training in empirical analysis of political behavior and normative political thought. The remainder of the students' MA course work is used to develop competence in one of the main fields of political science the department offers.

Students must then pass a comprehensive examination, for MA purposes, covering two of six fields.

### Department of Psychology

The department offers graduate training leading to a Doctor of Philosophy in psychology. Specialization in the fields of biological and health psychology, clinical psychology, cognitive psychology, developmental psychology, and social psychology is available, along with joint programs in clinical/developmental and clinical/health psychology. A specialization in Cognitive/Neuroscience is also available. The area of concentration in clinical psychology is accredited by the American Psychological Association.

### Contact Information

Department Chair: Julie Fiez  
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412-624-4502  
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E-mail: psygrad@pitt.edu  
http://www.psychology.pitt.edu/graduate-studies

### Admissions

Applications for admission must be submitted online by December 1. Admission is in the fall only. Applicants for admission to graduate study in psychology must submit academic transcripts, 3 letters of recommendation, a statement of goals, and certified scores on the Graduate Record Examination. Applicants to the clinical and joint-clinical programs may also submit scores for the GRE Subject test which is recommended, not required. Students may obtain information concerning the dates and places of administration of the GRE from the Graduate Record Examination, Educational Testing Service, Princeton, NJ 08541-0001; from www.ets.org; or from the testing service of their own college or university. International students must submit certified TOEFL scores; the minimum acceptable score is 90 on the Internet-based exam.

As preparation for graduate study, the department recommends broad undergraduate training including courses in biology, mathematics, the physical sciences, the social sciences, and effective oral and written expression. The department recommends college-level mathematics and 12 credits of psychology, including experimental psychology, statistics, and, for applicants to the clinical program, abnormal psychology.

### Financial Assistance
The Department of Psychology provides tuition and stipend support for students admitted to its graduate programs. Support may be in the form of a fellowship, research assistantship, or teaching assistantship. Qualified students are encouraged to apply for relevant fellowships. Historically, the department has been able to continue support for most students throughout their graduate training; however, funding is only guaranteed for four years.

**Faculty**

Dietrich School of Arts and Sciences Faculty

**Psychology, PhD**

Requirements for the PhD

A minimum of 72 credits is required for the PhD. The credits are readily earned in the course of completing the regular requirements. Up to 24 credits may be granted for a master's degree awarded by another institution.

In addition to the credit requirement, the PhD in psychology requires:

1. Demonstration of proficiency in the program-specific core and required courses as described in the following links: biological and health, clinical, cognitive, developmental, and social.
2. Demonstration of competence in research at the master's level, with an oral defense of a master's thesis or equivalent work. (This may be waived for students entering with a master's degree.)
3. Maintenance of a B average (3.0) in all course work.
4. A comprehensive examination in a field of specialization.
5. Demonstration of teaching competence in a formal course setting.
6. A dissertation based on empirical research.
7. An oral examination concerned primarily with the dissertation.

It is possible to complete these requirements in four years, although most students take four to six years to complete the work for a PhD.

**Clinical Program Note:** Clinical students are also required to complete a one-year internship in an approved setting. This internship normally takes place after the student has met the requirements for admission to doctoral candidacy. For this reason, the minimum time in which a PhD may be earned in clinical psychology is one year longer.

**Supervised Teaching:** Each student is required to fulfill a requirement of teaching at least one supervised course.

**Psychology, MS**

Requirements for the Master's Degree

Normally, students are only admitted for graduate study leading to the PhD. If a student wishes, he or she may also obtain a master's degree by submitting an approved master's thesis and fulfilling the 30 credit course requirement. Satisfactory completion of the program's specific core courses (as described in the following links: biological and health, clinical, cognitive, developmental, and social) constitutes the comprehensive examination for the MS.

**Department of Religious Studies**

*Religious Studies is currently not accepting graduate applications.*

The Department of Religious Studies offers the degrees of Master of Arts (MA) and Doctor of Philosophy (PhD). The principal purpose of the graduate program is to provide students with the research and teaching tools that may lead to careers in colleges, universities, and other venues in
which the academic skills of a religionist are utilized. The department encourages an interdisciplinary approach to the study of religion and works with students to design a course of study to meet intellectual needs within the limits of faculty expertise and available resources.

Contact Information

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412-624-5990
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E-mail: relgst@pitt.edu
www.religiousstudies.pitt.edu

Admissions

Religious Studies is currently not accepting graduate applications.

Financial Assistance

Teaching assistantships and tuition remission scholarships are available through the department on a competitive basis. Religious studies students are also eligible for fellowships offered through the University, including Provost's Humanities Fellowships for first-year graduate students, Mellon Predoctoral Fellowships, and FLAS and other awards offered through the University Center for International Studies (UCIS). Entering students are nominated directly by the department.

Degree Requirements

Graduate degree requirements established by the Dietrich School of Arts and Sciences at the University of Pittsburgh are described elsewhere in this bulletin and should be read in conjunction with the departmental requirements outlined below. Departmental rules allow no more than two upper-division (1000 level) courses to count toward graduate degrees and no more than 50 percent of graduate courses to be taken as directed or independent study.

Faculty

Dietrich School of Arts and Sciences Faculty

Religious Studies, PhD

Requirements for the PhD Degree

Course Requirements: The PhD in Religion requires 48 credits beyond the MA (72 credits beyond the BA). Graduate students entering the PhD program from another institution may have up to 24 credit hours at the MA level applied toward the PhD degree. Transfer credits require a grade of B or better (or the equivalent) and must be for work germane to the MA degree in Religious Studies. Students entering the PhD program from another institution meet the distribution requirements as outlined in the departmental requirements for the MA degree (save for the thesis) in the course of earning the PhD degree.

PhD credits are distributed as follows:

185
All graduate students entering from another institution take "Perspectives on Religion" (REL 2710, 3 credits)

Two courses on theories or methods related to the student's primary or complementary methodological focus (6 credits). One of these courses (3 credits) is earned at the MA level.

Ten courses within the student's areas of specialization (30 credits). Four of these courses (12 credits) are earned at the MA level.

Two courses in each of two religious traditions or contexts other than the student's area of specialization (12 credits). Two of these courses (6 credits) are earned at the MA level.

Twenty-one elective credits, including courses devoted to the preparation of qualifying examinations, advanced language training, the preparation of the dissertation prospectus, and the research and writing of the dissertation (21 credits).

Preliminary Examination: The preliminary examination is required of students who enter the PhD Program with a Master's Degree from another institution. See the "Comprehensive Examination" in the MA Program.

Language Examinations: Verification of reading knowledge of two modern second languages is required. Determination of the two required modern languages is made on the basis of research needs and professional expectations in the student's area of specialization. Students whose research primarily involves English-language sources or one language of research still satisfy the two modern languages requirement. Students pass one of the language requirements prior to sitting for the comprehensive examination.

When applicable, an intermediate or advanced level of competency in modern and/or classical second languages judged necessary for research and standard in a student's area of specialization is required for admission into the program. Additional modern and/or classical language study, as appropriate, may be required as part of the student's professional training.

Comprehensive Examination: Students take the comprehensive examination upon completing all required course work (save for a maximum of 6 credits devoted to preparation of the dissertation prospectus and research and writing of the dissertation) and passing the preliminary and language examinations. The examination is designed to test for both breadth and depth in the student's area of specialization and intended area of research by evaluating the student's critical abilities in three fields that impact the dissertation. The examining committee is comprised of three faculty members chaired by the dissertation advisor. Three written field examination are followed by a one-hour oral defense.

Dissertation Prospectus and Overview: Defense of the dissertation prospectus at a two-hour overview meeting is the final stage before application for admission to PhD candidacy (ABD status). The dissertation committee is composed of four faculty members chaired by the dissertation advisor.

Dissertation: The doctoral dissertation is an independent, original, and significant contribution to knowledge, grounded in an appropriate body of primary and secondary sources. Successful completion of the dissertation signifies the preparation of the author to assume a position within the profession. The dissertation is defended at a two-hour oral defense.

Department of Slavic Languages and Literatures

The Department of Slavic Languages and Literatures offers the degrees a Master of Arts (as a degree leading to the Doctor of Philosophy) and a Doctor of Philosophy, with an area of concentration in Russian literature and culture, including cinema. Students may combine work for the MA and PhD degrees with a program of regional specialization leading to a certificate in Russian and East European Studies; Cultural Studies; Film Studies; Gender, Sexuality, and Women's Studies; Jewish Studies; and others.

Eligible Slavic PhD students may apply, before taking the Slavic PhD comprehensive examinations, to transfer to Pitt's Interdisciplinary Film Studies PhD (with a concentration in Slavic), thereby working towards a single PhD in two disciplines. For information on the Interdisciplinary Film Studies PhD, see http://www.english.pitt.edu/graduate/phd-film-studies.

Contact Information

Department Chair: David J. Birnbaum
Main Office: 1417 Cathedral of Learning
412-624-5906
Fax: 412-624-9714
E-mail: slavic@pitt.edu
www.slavic.pitt.edu
Admissions

Applicants for admission must submit transcripts of all college-level work, three letters of recommendation, a career statement, an academic writing sample, and scores on the verbal, quantitative, and writing assessment-analytical sections of the Graduate Record Examination. International applicants whose first language is not English are required to submit either the TOEFL administered by the Educational Testing or the IELTS administered by the University of Cambridge, Local Examinations Syndicate. Applications will be accepted for fall term admission until April 15. For awards consideration, applications must be completed by January 15. The department admits students only for the fall term. The department normally admits students only for the fall term.

Financial Assistance

Graduate students who have been admitted with a teaching or non-teaching fellowship for their first year of study will have their support renewed for at least an additional four years as long as 1) their teaching performance is satisfactory and 2) they are making regular progress in their graduate studies.

Faculty

http://www.slavic.pitt.edu/people/faculty/index.php

Slavic Languages and Literature, PhD

Requirements for the PhD

Credit Requirement: 72 graduate credits (36 beyond the MA), of which 12 may be dissertation credits; at least 60 credits must be completed by the end of the semester in which the examination is to be taken.

Approved Second Area: Nine-15 credits outside the department (but in the 72-credit total) in an approved second area (e.g., Russian and East European Studies, Cultural Studies, Film Studies, Study of Women, Gender and Sexuality, Jewish Studies, European literature, etc.).

Research Languages: A reading knowledge of both French and German is required before taking the PhD comprehensive exam.

PhD Qualifying Examinations: The MA comprehensive exam also serves as the PhD qualifying exam for those students who wish to pursue graduate work at the PhD level.

Supervised Teaching Experience: Supervised teaching experience is an integral part of the doctoral program. All PhD candidates have the opportunity to teach courses in language, literature, and culture, initially by assisting other instructors, and, at a more advanced stage, in stand-alone courses.

Comprehensive Examination: Students take a PhD comprehensive examination after approximately two years of coursework beyond the MA. For examination procedures visit http://www.slavic.pitt.edu/graduate/examinations.

Dissertation Overview: Following successful completion of the comprehensive examination, the student files an application for admission to candidacy for the Doctor of Philosophy. At this stage the student presents a proposed topic for doctoral research and a research design for its execution to be reviewed by the dissertation committee.

Dissertation Defense: The final oral examination in defense of the doctoral dissertation is conducted by the doctoral committee and is open to the University community.
Slavic Languages and Literature, MA

Requirements for the MA

For the MA, students must earn 36 hours of graduate credit with a B average or better in courses numbered 1000 or above. At least half of these credits must be in courses numbered 2000 or above. All MA students are required to complete RUSS 2110 - INTRODUCTION TO THE STUDY OF LITERATURE 1, RUSS 2210 - STRUCTURE OF RUSSIAN, and RUSS 2230 - HISTORICAL GRAMMAR. Courses are chosen in consultation between the student and DGS and are subject to approval by the latter. The remainder of student coursework is used to develop competence in Russian literature and culture or in an approved second area (see below). MA candidates must also demonstrate a reading knowledge of either French or German before taking the MA comprehensive exam.

The MA comprehensive exam covers material from a reading list. For examination procedures see http://www.slavic.pitt.edu/graduate/examinations.

Department of Sociology

The Department of Sociology offers the degrees of Master of Arts and Doctor of Philosophy. However, a terminal Master's degree is infrequently awarded, as students awarded Master's Degrees usually continue in the Department to receive PhD Degrees.

The faculty conduct research and offer courses within two broadly defined areas: 1) social movements and 2) politics and culture. Within each of these areas, graduate students are able to pursue a variety of theoretical, substantive, and methodological interests.

Graduate students are encouraged to combine their work in sociology with multidisciplinary study in a particular area by enrolling in any of the following certificate programs: African Studies, Asian Studies, European Studies, Global Studies, Latin American Studies, Russian and Eastern European Studies, Cultural Studies, or Gender, Sexuality, and Women's Studies.

Contact Information

Department Chair: Suzanne Staggenborg
Main Office: 2406 Posvar Hall
412-648-7582
Fax: 412-648-2799
E-mail: suszstagg@pitt.edu
www.sociology.pitt.edu/graduate/

Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Sociology, Graduate Administrator, 4911 WWPH, Pittsburgh, PA 15260. Phone: 412-648-1399. E-mail: brd51@pitt.edu.

Admissions

Qualified students from any discipline are considered for admission. Qualifications include preparation for graduate-level work in sociological theory and both qualitative and quantitative research methods, including a required course in social science applications of multivariable regression models. Applicants must submit to the departmental director of graduate studies transcripts of all college-level work, three letters of recommendation, a career statement, a brief writing sample, and scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination. International applicants are also required to submit TOEFL scores, unless they hold an undergraduate or graduate degree from an accredited U.S. college or university. All applications and application fees must be submitted on-line. Applications are accepted for fall term admission until March 15. The department admits students only for the fall term.

Financial Assistance
Teaching assistantships and fellowships, Andrew W. Mellon Predoctoral Fellowships, Foreign Language and Area Studies Fellowships (administered by the University Center for International Studies), Provost Development Fellowships, and graduate student research assistantships are available.

**Faculty**

http://www.sociology.pitt.edu/faculty

**Sociology, PhD**

Requirements for the PhD

Admission: Prerequisite for admission is a Bachelor of Arts degree or equivalent preparation (plus approval from the Admissions Committee). If a Student has not yet received a Master's Degree at the time of application, the Department will require the student to pursue a Master's Degree at the University of Pittsburgh. The requirements for the Master's Degree are listed below. Those students entering with an MA degree from another institution may petition the Admissions Committee for a transfer of credits but core courses are usually not waived.

**Credit Requirement:** The PhD program requires 72 credits earned from a combination of the required core course sequences, MA courses, additional graduate sociology seminars, and any suitable combination from course work, independent study, research, and dissertation work as detailed elsewhere in this bulletin.

**Supervised Teaching Experience:** Supervised teaching experience is an integral part of the doctoral program. Typically, teaching experience is gained by conducting recitation sections of an introductory course and, once the MA is completed and the student has conducted recitations, by teaching an undergraduate course with the guidance of a faculty mentor.

**Comprehensive Examination:** The PhD comprehensive examination is an individually designed review essay using relevant research literatures to develop research questions for the dissertation and to support those questions with appropriate methodological and theoretical "best practices" in the field and substantive findings related to the dissertation project.

**Dissertation Overview:** At this stage students will have selected, in consultation with their dissertation committee, a suitable dissertation topic. Students present a written prospectus to their committee describing the purpose, scope, and method of proposed study and the sources upon which it will be based. Students are encouraged to give careful thought early on in their graduate work to possible doctoral research topics and discuss their interests with related faculty.

**Final Oral Examination:** The final oral examination in defense of the doctoral dissertation is conducted by the dissertation committee and is open to the University community.

**Sociology, MA**

Requirements for the Master's Degree

For the MA, students must earn 36 credits in approved graduate courses. The 36 credits must include completion of the nine credit core course sequence: Research Design, Social Theory, Qualitative Methods and Quantitative Methods, as well as at least 14 credits of elective graduate coursework in the sociology program with grades of B or better.

Students also write and defend a master's thesis for which they receive up to 6 credits.

Remaining credits may be earned with sociology electives (which may include 3 credits of directed study) or graduate coursework in other programs.

**Department of Statistics**
The Graduate Faculty offers various programs of study and research in statistics. Degree programs lead to the Master of Arts or Master of Science in applied statistics, the Master of Arts or Master of Science in statistics, and the Doctor of Philosophy in statistics. These may be pursued by full-time and part-time students. The department also provides courses for students engaged in graduate studies in other disciplines requiring statistics and for individuals requiring specialized statistical skills in the workplace. Full details of all programs and departmental regulations are available on the website at the address listed below.

 Contact Information

Department Interim Chair: Allan Sampson  
Main Office: 1800 Wesley W. Posvar Hall  
412-624-8368  
Fax: 412-648-8814  
Graduate Admissions Administrator: Denise Korzon  
E-mail: korzon@pitt.edu  
www.statistics.pitt.edu

Additional information concerning the department's graduate program may be obtained from the University of Pittsburgh, Department of Statistics, Graduate Admissions Administrator, 2720 Cathedral of Learning, Pittsburgh, PA 15260. Phone: 412-624-1674. Fax: 412-648-8814. E-mail: gerber@pitt.edu.

Admissions

http://www.statistics.pitt.edu/graduate/admissions

A basic requirement for admission to the graduate program in statistics is the completion of a bachelor's degree from an accredited institution in the United States or the completion of a level of education that the University of Pittsburgh deems comparable to a U.S. bachelor's degree. Applicants whose native language is not English and who have not already completed a degree program in a U.S. college or university are required to submit either the TOEFL (administered by the Educational Testing Service) or the IELTS (administered by Cambridge University, Local Examinations Syndicate). Graduate Record Examination (GRE) scores are required.

Decisions regarding admission are based on the applicant's official credentials, grade point averages, and the availability of faculty and facilities to meet the applicant's expressed academic or research needs and interests. With limited space available, not all qualified applicants can be admitted.

The minimal course requirements for admission into the graduate programs of the Department of Statistics are:

- Three terms of calculus
- Linear algebra
- One year of probability and statistics, preferably an introductory mathematical statistics sequence

Students lacking some of these prerequisites may be admitted provisionally at the discretion of the Graduate Committee. In addition, students intending to pursue the PhD should either have taken a one-term course in advanced calculus, or be prepared to take such a course in the first year of graduate study.

Financial Assistance

http://www.statistics.pitt.edu/graduate/financial-assistance

Financial assistance for graduate students is provided in the form of teaching and research assistantships, fellowships, tuition scholarships, and loans. Application for financial aid should be made on the application form for admission to graduate study. All applications for financial assistance are reviewed in the department with award decisions made on the basis of prior academic excellence and achievement and perceived potential for contributions to the field of statistics.

Students applying for fellowships or assistantships for the fall term should file their applications no later than January 15 of the same year.
Requirements for the Master's Degree in Statistics or Applied Statistics

http://www.stat.pitt.edu/graduate-programs

The department encourages its students to obtain a broad background in statistics, including both methods and theory courses, regardless of whether they specialize in applied statistical methodology or in statistical theory. Consequently, two-term sequences in applied statistical methods (STAT 2131-STAT 2132) and intermediate mathematical statistics (STAT 2630-STAT 2640) are common to all master's degree programs offered by the department, and are also generally taken by students whose goal is the PhD in statistics.

Faculty

Dietrich School of Arts and Sciences Faculty

Statistics, PhD

Requirements for the PhD

The main requirement for the Doctor of Philosophy in statistics is the successful completion and defense of a dissertation making a substantial and original contribution to statistics, probability, or their application. Prior to embarking on their research, candidates must pass the qualifying exam (see Requirements for the Master's Degree above) at the PhD level. To be admitted to PhD candidacy, candidates must successfully pass an oral PhD Comprehensive examination over an area of research chosen in consultation with their advisory committee. The purpose of the comprehensive examination is to demonstrate that students are able to understand, summarize, and make use of the statistical literature in an area of potential research that is of interest to them. Students who have found a specific topic for their dissertation are encouraged to combine the comprehensive examination with the presentation of the thesis proposal. Students who are not yet ready to present a proposal can still take the comprehensive exam, but must later submit a thesis proposal orally and in writing to their advisory committee.

Course requirements for the PhD are STAT 2631 - THEORY OF STATISTICS 1, STAT 2641 - ASYMPTOTIC METHODS IN STATISTICS, STAT 2661 - LINEAR MODELS THEORY 1, and STAT 2711-STAT 2712 (Probability Theory) or their equivalent. PhD candidates are also required to take at least three credits in statistical consulting; those students anticipating a career involving consulting are advised to take a substantial number of consulting credits. The remaining courses of the 72 credits required for the PhD will be decided in conjunction with the student's advisor and should consist of mainly formal courses prior to the commencement of research for the dissertation.

The department has no second language requirements for the PhD. Although not required, facility in the use of one or more computer programming languages, especially those used in writing statistical software (for example, SAS, R), is highly recommended.

Full-time graduate students usually take between four and five years to complete a PhD. Part-time students may be allowed as many as 10 years to finish all requirements. Additional information concerning examinations and requirements can be found in the Graduate and Professional Bulletin and the Kenneth P. Dietrich School of Arts and Sciences (A&S).

Applied Statistics, MA

Master of Arts

Department requirements for the Master of Arts in Applied Statistics are the completion of 33 credits, including the two year-long sequences STAT 2630-STAT 2640 and STAT 2131-STAT 2132 mentioned above, at least three credits in consulting, four courses (12 credits) in statistical methods or theory taken from a list of choices, and an approved two-course sequence (6 credits) taken at the graduate level in a discipline other than statistics. Students in our MA Statistics and MA Applied Statistics are required to pass the Preliminary Evaluation, which is equivalent to receiving grades of B or higher in the four core courses (STAT 2630, STAT 2640, STAT 2131, and STAT 2132). A student failing to meet the new grade requirement
needs to re-take the necessary course(s). Students are allowed to repeat the same course twice. They will be terminated from the master's program if they fail to achieve a grade of B or higher on their second attempt.

The Master of Arts in Statistics differs from the Master of Arts in Applied Statistics by replacing the requirements of a two-course sequence in a discipline other than statistics and 3 credits in consulting with the requirement that three additional 3-credit graduate-level statistics courses be taken. Both master's degrees require completion of 33 credits and the passing of the Preliminary Evaluation as explained about.

**Applied Statistics, MS**

**Master of Science**

The requirements for the Master of Science, either in applied statistics or in statistics, are the same as the requirements for the corresponding Master of Arts, except that two 3-credit statistics courses are replaced by 6 credits of STAT 2001 - RESEARCH AND THESIS FOR MS DEGREE, and an oral defense of the thesis is required.

**Statistics, MA**

**Master of Arts**

Department requirements for the Master of Arts in Applied Statistics are the completion of 33 credits, including the two year-long sequences STAT 2630-STAT 2640 and STAT 2131-STAT 2132 mentioned above, at least three credits in consulting, four courses (12 credits) in statistical methods or theory taken from a list of choices, and an approved two-course sequence (6 credits) taken at the graduate level in a discipline other than statistics. Students in our MA Statistics and MA Applied Statistics are required to pass the Preliminary Evaluation, which is equivalent to receiving grades of B or higher in the four core courses (STAT 2630, STAT 2640, STAT 2131, and STAT 2132). A student failing to meet the new grade requirement needs to re-take the necessary course(s). Students are allowed to repeat the same course twice. They will be terminated from the master's program if they fail to achieve a grade of B or higher on their second attempt.

The Master of Arts in Statistics differs from the Master of Arts in Applied Statistics by replacing the requirements of a two-course sequence in a discipline other than statistics and 3 credits in consulting with the requirement that three additional 3-credit graduate-level statistics courses be taken. Both master's degrees require completion of 33 credits and the passing of the Preliminary Evaluation as explained about.

**Statistics, MS**

**Master of Science**

The requirements for the Master of Science, either in applied statistics or in statistics, are the same as the requirements for the corresponding Master of Arts, except that two 3-credit statistics courses are replaced by 6 credits of STAT 2001 - RESEARCH AND THESIS FOR MS DEGREE, and an oral defense of the thesis is required.

**Teaching of English to Speakers of Other Languages (TESOL) Program**

TESOL is an acronym for Teachers of English to Speakers of Other Languages. Professionals in TESOL may be involved in teaching, administration, curriculum development, materials development, assessment, research, and advocacy. They work in a variety of contexts including various age levels, countries, and specialist areas such as English for specific purposes. This TESOL certificate program includes the study of: linguistics at an introductory level, structures of English, theories and practices of teaching second language, second language acquisition, materials and curriculum development, and assessment.

The Department of Linguistics offers two courses in the Teaching of English to Speakers of Other Languages (TESOL).
Higher Education Course

ESL Program Specialist Course

Application Deadline:

March 15 for the following fall term start date.

TESOL Certificate

TESOL is an acronym for Teachers of English to Speakers of Other Languages. Professionals in TESOL may be involved in teaching, administration, curriculum development, materials development, assessment, research, and advocacy. They work in a variety of contexts including various age levels, countries, and specialist areas such as English for specific purposes. This TESOL certificate program includes the study of: linguistics at an introductory level, structures of English, theories and practices of teaching second language, second language acquisition, materials and curriculum development, and assessment.

The Department of Linguistics offers two courses in the Teaching of English to Speakers of Other Languages (TESOL).

ESL Program Specialist Course

Requirements

Any student who wished to earn the certificate must fulfill the following requirements:

Prerequisite
(or taken concurrently with the first certificate course)

LING 1000 - INTRODUCTION TO LINGUISTICS

Course Requirements

LING 2738 - LINGUISTIC STRUCTURES OF ENGLISH
LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING
LING 2143 - SEM LANG TCHNG MATLS DEVELOPMENT
IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
IL 2253 - PRIN/PRA FRGN LANG TESTNG ASSMNT
LING 2195 - PRACTICUM ESL TEACHING

Please note:

1. LING 2195 - PRACTICUM ESL TEACHING involves supervised language teaching concurrent with or following LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING. Candidates fulfill the requirement by signing up for LING 2195 - PRACTICUM ESL TEACHING and teaching during that term in an informal ESL course run by the English Language Institute, OR, with permission of the TESOL Certificate advisor, another ESL teaching context.

2. The certificate candidate must earn a grade of B or higher in each certificate course.

Degree Prerequisite for Admission

Applicants must hold a baccalaureate degree or its foreign equivalent with a minimum grade point average of B (3.0 on a 4-point scale). Preference is given to applicants who have studied abroad, worked with international students, and/or have any EFL/ESL teaching experience (including volunteer).
Instructional I Prerequisite

Applicants must hold a Pennsylvania Instructional I certificate (or equivalent from another state) and be able to provide a copy as part of the application packet.

Foreign Language Learning Prerequisite for Admission

Native speakers of English should have classroom foreign language learning experience equivalent to at least one year of college level study of a language.

Each applicant who is not a native speaker of English must: (1) achieve a score of 100 or higher on the iBT TOEFL (Skill Requirements: Reading and Listening - High; Speaking and Writing - one skill must be at the level of Good) or 7.5 or higher on the IELTS (Skill Requirements: Speaking and Writing - combined minimum of 13) or their equivalent and (2) have good spoken English skills (a score of at least 4 on the ITA interview test administered by the University of Pittsburgh).

Transcripts and CV and Teaching Certificate

Undergraduate transcripts (and graduate if applicable) and a CV (including a list of references) must be submitted as part of the application. In addition, a copy of the applicant's state teaching certificate must be included in the application materials.

Plan of Study

Students must complete a TESOL certificate plan of study form after consultation with the TESOL Certificate advisor during the first term of study.

Completion of Requirements

When nearing completion of all TESOL certificate requirements, students must apply for graduation from the TESOL Certificate program through the Arts and Sciences Dean's Office. This graduation application is separate from any other degree graduation applications. Additional paperwork must be filed with the Pennsylvania Department of Education with the help of the TESOL Certificate advisor.

Suggested Sequence of Courses

Two-term Option

(entering in the fall term)

Fall:

- LING 1000 - INTRODUCTION TO LINGUISTICS (if needed)
- LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING
- IL 2253 - PRIN/PRA FRGN LANG TESTNG ASSMNT

Spring:

- LING 2738 - LINGUISTIC STRUCTURES OF ENGLISH
- I&L (Teaching ELLs)
- LING 2143 - SEM LANG TCHNG MATLS DEVELOPMENT
- [Practicum]

Four-term Option

(entering in the fall term)

Fall:
• LING 1000 - INTRODUCTION TO LINGUISTICS (if needed)
• LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING

Spring:
• LING 2738 - LINGUISTIC STRUCTURES OF ENGLISH

Fall:
• IL 2253 - PRIN/PRA FRGN LANG TESTNG ASSMNT
  [Practicum]

Spring:
• IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
• LING 2143 - SEM LANG TCHNG MATLS DEVELOPMENT
  [Practicum]

*Note:

Students must enter the program in the fall term. Students may complete LING 1000 - INTRODUCTION TO LINGUISTICS prior to the fall term, however.

Higher Education Course

Requirements

Higher Education Course Requirements

Any student who wishes to earn the certificate at the MA or PhD level:

Prerequisite
(or taken concurrently with the first certificate course)

• LING 1000 - INTRODUCTION TO LINGUISTICS

Course Requirements

• LING 2738 - LINGUISTIC STRUCTURES OF ENGLISH
• LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING
• LING 2143 - SEM LANG TCHNG MATLS DEVELOPMENT
• LING 2146 - SECOND LANGUAGE ACQUISITION
• IL 2253 - PRIN/PRA FRGN LANG TESTNG ASSMNT
• LING 2195 - PRACTICUM ESL TEACHING

PhD students must take an additional 3 credit course approved by the TESOL Certificate Advisor

Please Note:

1. LING 2195 - PRACTICUM ESL TEACHING involves supervised language teaching concurrent with or following LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING. Teaching Assistants who are teaching in the English Language Institute automatically fulfill the Practicum requirements, but they must sign up for LING 2195 - PRACTICUM ESL TEACHING once during their teaching terms. Other candidates fulfill the requirement by signing up for LING 2195 - PRACTICUM ESL TEACHING and teaching during that term in an informal ESL course run by the English Language Institute, OR, with permission of the TESOL certificate advisor, another ESL teaching context. The certificate candidate must earn a grade of B or higher in each certificate course.
2. Those applying for graduate degrees will completed the TESOL Certificate program application process after gaining acceptance to the degree program.

Degree Prerequisites for Admission
Applicants must hold a baccalaureate degree or its foreign equivalent with a minimum grade point average of B (3.0 on a 4-point scale). Preference is given to applicants who have studied abroad, worked with international students, and/or have any EFL/ESL teaching experience (including volunteer).

Second Language Learning Prerequisite for Admission

Native speakers of English must have classroom second language learning experience equivalent to at least one year of college level study of a language. Each applicant who is not a native speaker of English must: (1) achieve a score of 100 or higher on the iBT TOEFL (Skill Requirements: Reading and Listening - High; Speaking and Writing - one skill must be at the level of Good) or 7.5 or higher on the IELTS (Skill Requirements: Speaking and Writing - combined minimum of 13) or their equivalent and (2) have good spoken English skills (a score of at least 4 on the ITA interview test administered by the University of Pittsburgh).

Transcripts and CV

Undergraduate transcripts (and graduate if applicable) and a CV (including a list of references) must be submitted as part of the application.

Plan of Study

Students must complete a TESOL certificate plan of study form after consultation with the TESOL Certificate advisor during the first term of study. The student then will work with academic advisor if earning a graduate degree, or the TESOL Certificate advisor if not in a degree program.

Completion of Requirements

When nearing completion of all TESOL certificate requirements, students must apply for graduation from the TESOL Certificate program through the Arts and Sciences Dean's Office. This graduation application is separate from any other degree graduation applications.

Suggested Sequence of Courses

Two-term Option

(entering in the fall term)

Fall:

- LING 1000 - INTRODUCTION TO LINGUISTICS (if needed)
- LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING
- IL 2253 - PRIN/PRA FRGN LANG TESTNG ASSMNT
- Elective for PhD-level students

Spring:

- LING 2738 - LINGUISTIC STRUCTURES OF ENGLISH
- LING 2146 - SECOND LANGUAGE ACQUISITION
- LING 2143 - SEM LANG TCHNG MATLS DEVELOPMENT
- Practicum
- Elective for PhD-level students

Four-term Option

(entering in the fall term)

Fall:

- LING 1000 - INTRODUCTION TO LINGUISTICS (if needed)
- LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING
Elective for PhD-level students

Spring:

- LING 2738 - LINGUISTIC STRUCTURES OF ENGLISH
- LING 2146 - SECOND LANGUAGE ACQUISITION

Fall:

- IL 2253 - PRIN/PRA FRGN LANG TESTNG ASSMNT
- Elective for PhD-level students
- Practicum

Spring:

- Practicum
- LING 2146 - SECOND LANGUAGE ACQUISITION
- LING 2143 - SEM LANG TCHNG MATLS DEVELOPMENT

Note:

*Students must enter the program in the Fall term. Students may complete LING 1000 - INTRODUCTION TO LINGUISTICS prior to the fall term, however.

Department of Theatre Arts

The Department of Theatre Arts, founded in 1982, offers the MA, MFA, and PhD degrees, which integrate training and practice in the theater with scholarship and research in the liberal arts tradition. The minimal requirements for the degrees established by the Graduate Faculty and by A&S Graduate Studies, as described elsewhere in this bulletin, should be read in conjunction with the specific departmental requirements outlined in the Theatre Arts Graduate Handbook. A printed version may be requested by writing the Graduate Student Services Administrator: maggiebupp@pitt.edu.

For additional information on these aspects of study in the theatre arts at Pitt, visit the department website: www.play.pitt.edu.

Contact Information

Website: www.play.pitt.edu  
Theatre Box Office: 412-624-PLAY (7529)

Department Chair: Annmarie Duggan  
E-mail: duggan@pitt.edu  
Office: 1617C Cathedral of Learning  
Phone: 412-624-7285  
Fax: 412-624-6338

Director of Graduate Studies: Kathleen George  
E-mail: georgeke@pitt.edu  
Office: 1604 Cathedral of Learning  
Phone: 412-624-6659  
Fax: 412-624-6338

Graduate Student Services Administrator: Maggie Bupp  
E-mail: maggiebupp@pitt.edu  
Office: 1617 Cathedral of Learning  
Phone: 412-624-6568  
Fax: 412-624-6338
Admissions

Applicants to the PhD program in Theatre and Performance Studies should demonstrate a desire for rigorous research at the PhD level; potential for teaching excellence; interest in the exploration of artistic practice; and capacity for creative and critical risk-taking (in terms of research, artistic practice, and teaching). An MA in theatre arts is not a prerequisite for admission to the program. The department admits some highly qualified students with BAs directly into the PhD program.

The MA in Theatre and Performance Studies is open to all qualified students who have completed an undergraduate degree or who will complete one prior to registration. An undergraduate major in theatre arts is not a prerequisite for admission to the program. The department understands the MA degree as a preliminary to a PhD in Theatre and Performance Studies, although it may be undertaken for other reasons.

The MFA in Performance Pedagogy is open to all qualified applicants who have completed an undergraduate degree (or who will complete one prior to registration), along with an expectation of five or more years of professional theater experience. An undergraduate major in theatre arts is normally a prerequisite for admission to the program, though exceptions can be made if circumstances warrant. Because candidates will be teaching extensively during their residency, some teaching experience is preferred. Please note: applications for the MFA are accepted every other year.

Financial Assistance

The department offers a number of assistantships and fellowships involving teaching, administrative and technical work, assistance to faculty members, and combined duties. The requirements established by the Office of Admissions and Financial Aid must be met in order for students to be eligible for department teaching assistantships (TAs) and teaching fellowships (TFs). All students receiving TAs and TFs, receive a full aid package that includes tuition, health benefits, and a stipend. Doctoral students also are eligible for university fellowships, including the Provost's Humanities Fellowship and K. Leroy Irvis Fellowship.

Faculty

Dietrich School of Arts and Sciences Faculty

Theatre and Performance Studies in Theatre Arts, PhD

The PhD program in Theatre History and Performance Studies is distinguished by its emphases on historical and contemporary engagement with exigencies of mobility, ranging from exile, migration, and diaspora to translation and adaptation. The program prioritizes the transnational, the global, and the decolonial in theatre history and performance studies. Gender, race, ethnicity, and class function as primary areas of scholarly and artistic enquiry across historical, historiographical, literary, performance, and practice-based research methodologies. The program prioritizes the integration of scholarship with teaching and artistic practice.

The PhD program in Theatre History and Performance Studies trains scholars in historiographical methodology; performance studies; critical theory; historical, performance, and textual analysis. By the completion of their training, students are expected to demonstrate fluency with established scholarly paradigms of the field as well as facility with emergent and cross-disciplinary approaches. The rigorous five-year curriculum is comprised of departmental seminars offered by the graduate faculty and complemented by a range of seminars from across the University's thriving intellectual departments and communities, including History of Art and Architecture, Film Studies, the Center for Latin American Studies, the Global Studies Center, the Gender, Sexuality, and Women's Studies Program, and the Cultural Studies program, among others. The PhD program mentors a students' professionalization by actively supporting publication, conference participation, and membership in professional organizations. The program prepares students to participate in and contribute to scholarly conversations nationally and internationally.

The program's scholarly training is directly linked to teaching and artistic creation. All PhD students instruct a variety of undergraduate courses under mentorship of the faculty, which may include history, dramatic analysis, and/or performance. The PhD program is integral to the department's BA's stated goals of training the next generation of artist-citizens as well as to the creative and critical work of the department's production season. Graduate students often serve as undergraduate mentors and advisors as well as artistic collaborators with the faculty. Through the Special Option, PhD students are mentored on an individual basis towards enhancing a primary, or developing a secondary, fluency with artistic practice and production processes, most often in the area of directing, dramaturgy, or playwriting. The PhD program welcomes applicants with MAs, MFAs, and other Masters degrees.
The PhD program in Theatre History and Performance Studies develops versatile, flexible graduate students with unique creative and critical aptitudes. Graduates of the program are well-qualified and competitive candidates for academic positions at a variety of institutions, post-doctoral research opportunities, and non-academic employment sectors.

Degree Requirements

A minimum of three years or six terms of full-time residency is required. It is not possible to complete the degree on a part-time basis.

72 credit hours, of which 24 can be granted for an approved Master's degree or its equivalent, are required past the BA, made up of courses stipulated in the curriculum and electives (including independent study, directed study, in-training programs, and dissertation credits).

Students are required to demonstrate advanced knowledge in one foreign language sufficient to read criticism and drama in the language and sufficient to allow them to attend a play in the language and understand it reasonably well. The language requirement may be fulfilled in four ways.

# of courses required (list core courses, etc.)

One, Two, or three sections of World Theatre (as designated by the Diagnostic Exam)

Nine seminar-level courses in history, literature, and critical theory of theatre and performance studies. During the first two semesters of a full-time PhD student's program, she or he must take at least three of these seminars in the Department of Theatre Arts.

At least seven of the nine required courses will be advanced graduate seminars in the Department of Theatre Arts (2000 series). The others may be graduate-level (2000 series) listed in any appropriate University department. Courses labeled "research," "directed study," or "independent study" cannot be used to fulfill this requirement, except by approval of the Graduate Faculty. The student's advisor will regularly monitor selection of courses, and approve the overall sequence chosen. No lower-level undergraduate courses numbered 0001-0999 may be applied toward a graduate degree.

PhD Prelim Evaluation

All students who enter the PhD program are required to take the preliminary examination. Students in their first year of doctoral study must take a minimum of three seminars in the department. Their work in those seminars shall constitute the basis for the prelim exam. The exam is designed to assess students' critical thinking, facility with methodology, and writing skills as well as ability to articulately discuss the course material in the selected seminars.

Comprehensive Exam

By the end of their second year, students should begin to consider and discuss with faculty areas for their comprehensive exam that fall into the three categories: Critical Methodologies and Theoretical Discourses; Historical Discourses; Textual Discourses. By the beginning of their third year, three areas of study should be approved. Through the comprehensive examination, students demonstrate both breadth and depth in regards to theatre and performance history, theory, and practice.

Proposal/overview

The prospectus proposes the subject and plan for the completion of the dissertation. The graduate faculty member who will serve as chair for the student's dissertation committee will provide guidance for the completion of the prospectus. Once the committee chair has approved the prospectus, the student will schedule a defense with all of the members of their PhD committee.

Dissertation and Final Examination

The University of Pittsburgh's Graduate and Professional Bulletin outlines the requirements for the final stage of the degree, which is the preparation and defense of a dissertation. This written work, which must embody an extended original investigation of a problem of significance to theatre arts or performance studies, is the capstone to the research program of a student's training.
Performance Pedagogy in Theatre Arts, MFA

Designed to equip working, professional actors with the tools to expand their employment opportunities in teaching at the college and university level, the MFA in Performance Pedagogy at the University of Pittsburgh offers a dynamic synthesis of teaching, practice, and scholarship.

This program is based on the premise that the professional actor has already gained a level of craft and broad experience that can become the foundation for solid teaching skills. Therefore, emphasis is placed on exploration and strengthening of pedagogical techniques as related to areas of acting and performance training.

Each student is given the mentorship of an experienced teacher of performance and works closely with the mentor to create opportunities for independent studies in pedagogy and curriculum development. Students gain experience applying theory to the practice of teaching acting and performance classes every semester, creating a course, conducting master class workshops, working on production assignments, and coaching or advising undergraduate students as needed. Students are encouraged to develop an area of specialty and to develop other areas of training in order to broaden their knowledge and remain competitive in the academic market.

Degree Requirements

The curriculum for the MFA degree in Performance Pedagogy centers around three focus areas:

1. Pedagogical Study
2. History/Literature/Criticism
3. Other Electives.

Each semester students are expected to carry a 15-credit load in addition to teaching two performance classes. Classroom teaching serves as fulfillment of the student's work obligation to the university in addition to providing a laboratory for applying the pedagogical ideas under study.

# of courses required (list core courses, etc.)

60 credits are required for the program: 36-39 credits in pedagogy; 15 credits in History, Literature and Criticism; and 3-6 credits in electives. Core courses include: Techniques in Performance Pedagogy, Course Development, Production Mentorship, and Directed Studies in Pedagogy.

Thesis and Final Examination

The thesis project is the final requirement for the Performance Pedagogy degree. It is comprised of an original, created course plus a substantial written document that serves as a teaching guidebook for other instructors interested in using the thesis topic in the classroom. The thesis document identifies a pedagogical question, investigates that question through research or classroom work, and then identifies conclusions reached. Thesis documents should be written in such a way that a performance teacher could use the document as a study guide on the topic in question. Thesis documents typically range from 40-80 pages in length and are directly connected to the created course devised by the student.

Thesis planning occurs in the fall semester of the second year. The thesis document must be completed and approved by a two or three person committee selected by the student. An outline of the thesis proposal and the names of the thesis committee are due at the beginning of the final semester. At least one committee member must be from the performance faculty. All thesis documents require a committee signature page. The student must submit the final document (after committee approval) by the end of April of the graduating year. Students present an oral defense of the Thesis to their committee.

Theatre and Performance Studies in Theatre Arts, MA

The MA degree provides students with the necessary research skills to productively engage in scholarly conversations about theatre and performance. Because the department is committed to the integration of theory with practice, students have the opportunity to engage in various types of practical work while focusing their academic studies toward a final Comprehensive Examination or MA Thesis.
Interdisciplinary Programs

Computational Modeling & Simulation, PhD

Requirements

Course Requirements

http://cmsp.pitt.edu/course-requirements

All students enrolled in the program will be required to satisfy the following requirements:

1. Two courses (3 credits each) in Numerical Methods
2. Two courses (3 credits each) in Scientific Computing/Programming
3. Two courses (3 credits each) from a participating department outside Computer Science, Math, and Statistics, in the Dietrich School of Arts and Sciences or the Swanson School of Engineering
4. 12 credits in a concentration area in a participating department in the School of Arts and Sciences or in the Swanson School of Engineering
5. Enrollment in the Computational Modeling and Simulation Seminar series for all fall and spring semesters in residence

A minimum of 24 credits from categories I-IV are required, there can be overlap in courses satisfying requirement IV and those satisfying I, II, and III.

Preliminary Exam

A student will satisfy the preliminary exam requirements by passing (grade B or higher) the six courses in areas I-III described above. In the case that a student received one grade below B in one of the three main areas, he/she can counter that with a grade of B or above in an additional approved course in that area. If a student receives two grades below B, he/she will no longer be able to continue in the program. Students who do not meet these requirements but who have an overall grade average of B or better, have the option of doing a literature-based Master's thesis.

Comprehensive Exam

The comprehensive exam will be taken by the end of the student's seventh semester at Pitt, and will focus on the progress that the student has made to date on his/her research. The comprehensive exam will consist of a written report prepared by the student on his/her research, followed by an oral examination. The exam will be administered by a committee of four faculty members, at least two of whom (including the student's advisor) will be from the Department of the student's concentration, and at least one of whom will be from an outside department. If a student does not pass the comprehensive exam, he/she will have the option of continuing in the program for another semester and submitting a Master's thesis based on independent research. The student's committee will decide on whether the thesis warrants awarding the MS degree.

Dissertation/Thesis

Every graduate student has to write a thesis or dissertation before being awarded a MS or PhD degree. Browse our publications section for recently posted theses, dissertations, and presentations. All theses and dissertations are submitted online. Visit the EDT Web site for more information on the process.

Course Requirements

http://cmsp.pitt.edu/course-requirements
A minimum of 24 credits of graduate level courses from categories I - IV will be required. It is anticipated that students entering the program will be able to complete the six core courses in categories I - III in their first year and the concentration requirements in the second year.

Computational Modeling and Simulation Seminar Series: All students enrolled in the program are expected to attend the Computational Modeling and Simulation seminar program each semester they are enrolled. Students will receive one credit for each term they are enrolled in the Seminar Series. Seminars will be held typically twice per month, during the academic year. Each enrolled student will be required to give a seminar in this series, at least six months before the PhD defense.

University Credit Requirement: All students in the program must satisfy the university's requirement of a minimum of 30 credits for an MS. At least 24 of these credits will be satisfied by the core program, including the concentration area, described above, and at least 4 credits will be satisfied by enrollment and participation in the Computational Modeling and Simulation seminar program. The remaining credits will be met by directed study (i.e., research).

Interdisciplinary Studies - Medical Informatics Concentration, PhD

Requirements for the PhD

Students pursuing the Doctor of Philosophy degree in ISP must complete a program of study approved by an advisory committee of faculty. A total of 72 graduate credits are required for this degree. This program must include:

(a) The required credits:

- ISSP 2020 - TOPICS IN INTELLIGENT SYSTEMS
- ISSP 2030 - ADVANCED TOPICS IN INTELLIGENT SYSTEMS
- ISSP 2160 - FOUNDATIONS OF ARTIFICIAL INTELLIGENCE or
- CS 2710 - FOUNDATIONS OF ARTIFICIAL INTELLIGENCE
- INFSCI 3005 - INTRODUCTION TO THE DOCTORAL PROGRAM

(b) Two courses from the following:

- ISSP 2170 - MACHINE LEARNING or
- CS 2750 - MACHINE LEARNING
- ISSP 2230 - INTRO NATURAL LANGUAGE PROCESSING or
- CS 2731 - INTRO NATURAL LANGUAGE PROCESSING

(c) A theory course from both A and B

A

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- STAT 2131 - APPLIED STATISTICAL METHODS 1
- STAT 2132 - APPLIED STATISTICAL METHODS 2

B
(d) an additional course from either A or B

(e) four advanced courses numbered 2000 or higher

(must be approved by advisor)

(f) GPA of 3.0 or better

(g) Successful defense of a proposal and doctoral dissertation

Concentration Requirements

http://www.isp.pitt.edu/about/degrees

The curriculum assumes that a student already has training in a health care field. If this is not so the faculty will select a set of courses that teaches the student basic medical knowledge, and the student may take these courses as electives.

**Computational Modeling & Simulation, MS**

Requirements

**Course Requirements**

http://cmsp.pitt.edu/course-requirements

All students enrolled in the program will be required to satisfy the following requirements:

1. Two courses (3 credits each) in Numerical Methods
2. Two courses (3 credits each) in Scientific Computing/Programming
3. Two courses (3 credits each) from a participating department outside Computer Science, Math, and Statistics, in the Dietrich School of Arts and Sciences or the Swanson School of Engineering
4. 12 credits in a concentration area in a participating department in the School of Arts and Sciences or in the Swanson School of Engineering
5. Enrollment in the Computational Modeling and Simulation Seminar series for all fall and spring semesters in residence

A minimum of 24 credits from categories I-IV are required, there can be overlap in courses satisfying requirement IV and those satisfying I, II, and III.

**Preliminary Exam**

A student will satisfy the preliminary exam requirements by passing (grade B or higher) the six courses in areas I-III described above. In the case that a student received one grade below B in one of the three main areas, he/she can counter that with a grade of B or above in an additional approved course in that area. If a student receives two grades below B, he/she will no longer be able to continue in the he program. Students who do not meet these requirements but who have an overall grade average of B or better, have the option of doing a literature-based Master's thesis.

**Comprehensive Exam**
The comprehensive exam will be taken by the end of the student's seventh semester at Pitt, and will focus on the progress that the student has made to date on his/her research. The comprehensive exam will consist of a written report prepared by the student on his/her research, followed by an oral examination. The exam will be administered by a committee of four faculty members, at least two of whom (including the student's advisor) will be from the Department of the student's concentration, and at least one of whom will be from an outside department. If a student does not pass the comprehensive exam, he/she will have the option of continuing in the program for another semester and submitting a Master's thesis based on independent research. The student's committee will decide on whether the thesis warrants awarding the MS degree.

Dissertation/Thesis

Every graduate student has to write a thesis or dissertation before being awarded a MS or PhD degree. Browse our publications section for recently posted theses, dissertations, and presentations. All theses and dissertations are submitted online. Visit the EDT Web site for more information on the process.

Course Requirements

http://cmsp.pitt.edu/course-requirements

A minimum of 24 credits of graduate level courses from categories I - IV will be required. It is anticipated that students entering the program will be able to complete the six core courses in categories I - III in their first year and the concentration requirements in the second year.

Computational Modeling and Simulation Seminar Series: All students enrolled in the program are expected to attend the Computational Modeling and Simulation seminar program each semester they are enrolled. Students will receive one credit for each term they are enrolled in the Seminar Series. Seminars will be held typically twice per month, during the academic year. Each enrolled student will be required to give a seminar in this series, at least six months before the PhD defense.

University Credit Requirement: All students in the program must satisfy the university's requirement of a minimum of 30 credits for an MS. At least 24 of these credits will be satisfied by the core program, including the concentration area, described above, and at least 4 credits will be satisfied by enrollment and participation in the Computational Modeling and Simulation seminar program. The remaining credits will be met by directed study (i.e., research).

Interdisciplinary Studies - Medical Informatics Concentration, MS

Requirements for the Master's Degree

Overlapping with ISP requirements of the Dietrich School of Arts and Sciences (A&S). Students should speak with their advisors to make sure they complete both sets of requirements.

Students pursuing the Master of Science degree in ISP must complete a minimum of 24 credits including:

(a) First year students are encouraged, but not required, to take the following:

- ISSP 2020 - TOPICS IN INTELLIGENT SYSTEMS (fall)
- ISSP 2030 - ADVANCED TOPICS IN INTELLGNC (spring)
- INFSCI 3005 - INTRODUCTION TO THE DOCTORAL PROGRAM

(b) The required courses:

- ISSP 2160 - FOUNDTNS OF ARTIFICIAL INTELLGNC

Two courses from the following:
• ISSP 2170 - MACHINE LEARNING or
  • CS 2750 - MACHINE LEARNING

• ISSP 2230 - INTRO NATURAL LANGUAGE PROCSSNG or
  • CS 2731 - INTRO NATURAL LANGUAGE PROCSSNG

(c) A theory course from both A and B

A

• BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
• BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
• STAT 2131 - APPLIED STATISTICAL METHODS 1
• STAT 2132 - APPLIED STATISTICAL METHODS 2

B

• CS 2110 - THEORY OF COMPUTATION
• CS 2150 - DESIGN & ANALYSIS OF ALGORITHMS

(d) Four advanced courses numbered 2000 or higher

(must be approved by advisor)

(e) GPA of 3.0 or better

(f) MS-Level Project

Approved by the faculty after an oral prospectus presentation, involving significant research, design, or development work and a written report.

Concentration Requirements

http://www.isp.pitt.edu/about/degrees

The curriculum assumes that a student already has training in a health care field. If this is not so the faculty will select a set of courses that teaches the student basic medical knowledge, and the student may take these courses as electives.

Dietrich School of Arts and Sciences Faculty

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<tr>
<th>Last Name</th>
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<th>Rank</th>
<th>Department</th>
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Joseph M. Katz Graduate School of Business

The Joseph M. Katz Graduate School of Business creates and disseminates knowledge that enhances the quality of the management of organizations. The Katz School, through faculty research programs and our doctoral program, produces high-quality research in areas of importance and infuses knowledge created by this research into all programs, but especially the MBA and related professional programs. Our school's reputation, primarily resulting from our MBA programs and our doctoral program, allows us to attract international, national, regional, and campus partners, with whom collaboration results in specialty professional programs with the MBA program as a foundation. This includes areas such as international business, technology management/engineering, and the health sciences. Our culture of teamwork, adaptability, and flexibility permits the school to readily adapt to future environments and strategic opportunities.

The Katz School is accredited by AACSB-the International Association for Management Education.

Contact Information

University of Pittsburgh
Joseph M. Katz Graduate School of Business
Assistant Dean for MBA and Executive Programs
301 Mervis Hall
Pittsburgh, PA 15260
412-624-6440
E-mail: valenta@katz.pitt.edu
www.katz.pitt.business.edu

Application Procedures

Please refer to individual program descriptions in this section for further information regarding application procedures for MBA and MS programs and the doctoral program.

Degree Options

The Katz School awards the Master of Business Administration (MBA) as well as Specialized Master of Science (MS) degree programs and the Doctor of Philosophy (PhD). Fulltime and part-time programs are available in the following areas: finance, management of information systems, marketing, operations management, organizational behavior and human resources management, and strategy.

In addition to the above degrees, the Katz School offers a number of dual and joint degree options for students who wish to specialize and add a second professional degree to the MBA:

- MBA and Master of International Business
- MBA and Master of Public and International Affairs
- MBA and MS degrees in engineering
- MBA and Master of Health Administration
- MBA and Master of Social Work
- MBA and Juris Doctorate

In cooperation with the University of Pittsburgh's College of Business Administration, the Katz School offers an accelerated BSBA and MS in Accounting program.

- 3+1/BS in Business Administration/MS in Accounting

For further information regarding these dual- and joint-degree programs, please refer to MBA Program Descriptions.
Special Academic Opportunities

The Katz School offers the following special opportunities/programs:

Professional Workshops

Students participate in a variety of workshops throughout the program. During the Transition Module, students take a self-assessment to identify strengths and weaknesses in various managerial skills. Results of this capability assessment and career evaluation exercise help students determine those workshops that will be most beneficial to them such as presentation skills, project management, conflict resolution, creativity, problem solving, and time management.

Study Abroad

As part of a 6-credit MBA international elective course, students spend four to six weeks studying at a school in another country (past countries include the Czech Republic and India).

International Field Studies

As part of a 3-credit international elective course, students spend 10 days in another part of the world studying business culture and practices and visiting different companies in other parts of the world (regions visited in the past include Eastern Europe and Latin America).

Corporate Connections

There are also a number of programs that bring CEOs of major firms to the Katz School to meet and interact with students including Best Practice Partners, Executive Faculty, Executive Women's Panel, Executive Spotlight, and the Katz on Wall Street Panel.

Graduation

A special Katz School graduation ceremony for all graduating Master's and doctoral students is held at the end of April on campus.

Doctoral Program

The theoretically based, managerially relevant doctoral program in business administration seeks to prepare students for careers in research and teaching in management and related areas at leading business schools and universities. This is accomplished by fostering a learning environment in which students can achieve intellectual growth and fulfillment. Successful completion of the doctoral program therefore entails much more than the satisfaction of a set of formal requirements. Doctoral students are expected to assess their knowledge and skills in regular consultation with the faculty and to develop a set of educational experiences that will fulfill their needs and facilitate the pursuit of personal goals.

Contact Information

University of Pittsburgh  
Joseph M. Katz Graduate School of Business  
Doctoral Program  
Director  
282 Mervis Hall  
412-648-1522  
www.katz.business.pitt.edu/phd
Application Procedures

All application materials must be submitted by January 1 of the year of expected entry into the program. The basic prerequisite for admission to the doctoral program is the equivalent of an American bachelor's degree. Many applicants also have advanced degrees and professional experience. Scores on the GMAT or GRE (as well as on the TOEFL for international students) are required, along with recommendation letters and transcripts.

Financial Aid

Most financial aid for doctoral students is in the form of an assistantship that requires research and some teaching. The assistantship provides a stipend, tuition remission, and health insurance. Assistantships are available to domestic as well as international students. Funds associated with specific research projects are sometimes available to students, and faculty often help students obtain funding for dissertation research.

Sequence of Study

Progress to the PhD consists of: the seminar phase, comprehensive examinations, teaching requirement, and the dissertation. Students complete course work in the seminar phase. This is the time during which the student sets scholarly standards and goals. Every student prepares a written statement called the Field Statement upon declaring the student's areas of study. This is also the time to form relationships with faculty members and begin developing research skills.

Most doctoral courses involve research projects and the majority of students, including all those with assistantships, work on faculty research from an early stage. A minimum of 72 post baccalaureate credits is required for the PhD degree. A maximum of 30 credits from a previously earned master's degree may be applied.

Formal requirements in the seminar phase are:

- Work to ensure a basic level of competence in the disciplines and functions relevant to management. Students choose 6 credits of MBA course work. Some or all of these requirements may be exempted depending on educational background and doctoral course objectives.
- Eight courses in the major area of study and three courses in the minor area of study or a seven course research methodology minor.
- A 6-credit teaching requirement.
- At least four courses in research methodology or a seven course research methodology minor.
- A grade point average of 3.3.
- A preliminary evaluation (comprehensive examinations).

Comprehensive examinations are written and oral examinations in both the major and minor area of study. Each student's exams are designed individually, focusing on the area(s) of study. The student is expected to demonstrate comprehensive ability, meaning the ability to synthesize and build on all that the student has learned.

Dissertation

Doctoral students are required to demonstrate their capacity to engage in a sustained research effort by completing a doctoral dissertation. The dissertation entails an independent investigation of a problem of acknowledged significance and size in a management-related area. Only if the dissertation is judged to demonstrate such competence, after a formal defense in a final oral examination, does the department recommend the awarding of a degree.

For more details on requirements of doctoral students, see Regulations Pertaining to Doctoral Degrees.

Teaching

All Katz doctoral students are required to teach six credits as the primary instructor, at the University of Pittsburgh as part of their graduation requirements.
Timeline to Graduation

Most students earn the PhD in four years. The seminar phase typically lasts two years, while the comprehensive exams and the dissertation together require an additional two years to complete.

Statute of Limitations

The statute of limitations represents the maximum time permitted for the fulfillment of all requirements for the PhD degree. The statute of limitations is as follows:

1. Comprehensive examinations must be completed no later than the seventh term of study.
2. The dissertation overview examination must be successfully completed before the end of the fourth year.
3. The dissertation defense must be completed successfully before the end of the sixth year.

Exceptions to the Katz Doctoral Program statute of limitations, not to exceed the University of Pittsburgh's statute of limitations, must be approved by the Katz Doctoral and Research Committee.

Placement

The Katz School's goal is to place PhD graduates in universities that consistently produce high-quality business research, and a successful record has been established in this regard.

Individual Curriculum Design

Students must choose from the following areas of study leading to the PhD in Business Administration:

- Accounting
- Business Analytics and Operations
- Finance
- Information Systems and Technology Management
- Marketing
- Organizational Behavior and Human Resource Management
- Strategic Management

Within the framework of these standard areas, every PhD student plans a unique, individual area of study. A student may choose any of the areas as a primary (major) area of study or as a secondary (minor) area of study. Each of the areas of study provides additional choices to meet student interests and developmental needs. All have subspecialties; all explore a range of current topics. In addition, to expand the option in the core areas, students are invited to draw on courses and research opportunities at the Katz School, as well as other parts of the University, and other institutions.

Two goals must be balanced in planning an individual program. One is to acquire a sound body of knowledge in recognized disciplines and methods. The other is to choose a mix of courses, mentors, and research topics geared to the student's own interests and talents. Ideally, this will lead to a truly original dissertation, followed by a career of meaningful research.

MBA and Master's Programs

The following section details the full range of programs for students interested in pursuing an MBA, an MS, or an MBA and another degree at the same time. Unless otherwise noted, additional information regarding these programs may be obtained by contacting the Admissions Office.

Contact Information
Application Procedures

https://www.katz.business.pitt.edu/apply

Applicants should have earned an undergraduate degree from an accredited U.S. college or university or its equivalent and should demonstrate quantitative competence via academic coursework and GMAT or GRE. Applicants should be able to demonstrate excellent communication and interpersonal skills that are evaluated through written essays, test scores, and/or a personal interview.

The Graduate Management Admission Test (GMAT) or the Graduate Record Exam (GRE) is required, and for international applicants, the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) is also a requirement. International applicants should also see the section on Admissions of International Students in the front section of this bulletin.

Financial Assistance

The primary sources of financial assistance for incoming full-time Katz MBA students are tuition scholarships and loans. Limited scholarships are available for the MS programs.

Merit-based scholarships are awarded in various dollar amounts and are directly applied against tuition charges. Katz School scholarships are available to full-time U.S. citizens, U.S. permanent residents, and international students. Award notifications are mailed along with the official admission decision. While consideration for scholarship candidate is independent of the admissions decision, there is no additional application required.

There are several educational loan programs available for students. All of them offer very reasonable interest rates.

Tuition and Fees

Financial Information

Actual tuition for the one-year MBA and two-year MBA programs is approximately the same. However, students in the two-year MBA program will incur additional cost in academic fees, as they will be attending the equivalent of one additional term.

Master's Program Academic Standards

The following section details academic standards for the full-time Masters programs.

Good Academic Standing

In order to maintain good academic standing, a cumulative grade point average of 3.00 or above in all courses applicable to the degree is required throughout the program and for graduation from the Katz program.

Academic Probation and Dismissal Policy
Any student whose GPA falls below 3.00 at any time during the program may be subject to academic probation and/or dismissal from the full-time program. Exceptions to the school's guidelines and procedures may be considered only through written petition to the assistant dean for Master's programs.

**Dean's List**

The Dean's List for full-time students is compiled at the end of each term and consists of 20 percent of the student body with the highest grade point averages (3.75 or above).

**Other Academic Honors**

The Katz School recognizes high academic achievement and leadership through the following honors and awards.

- **Albert Wesley Frey Prize** is awarded to a full-time MBA student for the highest academic performance among all full-time graduating students.

- **Beta Gamma Sigma** is an international honor society recognizing the outstanding academic achievements of students enrolled in collegiate business and management programs.

- **Brosius Creativity Award** is awarded to those students demonstrating exceptional creativity in their program of study.

- **Dean's Outstanding Student Service Award** is awarded at graduation to an MBA student for exemplary service and leadership.

- **Marshall Alan Robinson Prize** is awarded at graduation to a full-time MBA student who has demonstrated academic and professional excellence in the MBA program.

- **Outstanding Professional MBA Student of the Year Award** is awarded at graduation for exemplary academic performance and leadership.

- **Outstanding Master of Science Student of the Year Award** is awarded at graduation for exemplary academic performance and leadership.

- **Outstanding Supply Chain Management Masters Student Award** is awarded at graduation for exemplary academic performance and leadership.

- **Peter Stipanovich Award** is awarded to the outstanding full-time MBA student in finance.

- **Sheth Scholar in Marketing** is awarded to two students each year for exemplary performance in marketing course work.

- **Vincent W. Lanfear Prize** is awarded to a professional MBA student for highest academic performance among all professional graduating students.

**Transfer of Graduate-Level Courses**

Students are permitted to transfer up to 6 graduate credit hours (for MS) and 17 graduate credit hours (for the one year MBA program), 19 (for the two year MBA program) from other AACSB-accredited MBA programs. However, these credits may not have been applied to another degree. If a student earned a degree at another school, the student must verify by letter that the courses desired for transfer did not apply to that degree; if a degree was not earned then a letter is not necessary. All courses must be completed with a grade of "B" or higher to be eligible for transfer consideration.

If a student wishes to have previously earned graduate credits applied to the Masters degree as transfer credits, the appropriate forms must be completed and returned to the school's student records office. The appropriate faculty members will inform the student of the results after a review.

If a student must relocate during his or her studies at the Katz School, one-third of the total required credits may be taken at an AACSB-accredited MBA program to complete the MBA degree at the University of Pittsburgh. Courses taken at other institutions must be approved by the Katz School faculty. It is therefore recommended that each course be pre-approved for transfer before enrollment.

A student must have earned two-thirds of their total required credits from the University of Pittsburgh in order to qualify for an MBA from the Katz School. Note that all transfer credits are subject to the guidelines imposed by the statute of limitations.
Statute of Limitations

The Katz School requires completion of all degree requirements within four years of original registration. Under extraordinary circumstances, this statute may be extended, one year at a time, to a maximum of six years. The director of student services, upon written request, will consider extension of the statute of limitations. A detailed request must be filed before the end of the statutory period. Under no circumstances will a student be allowed more than six years to complete the degree.

This statute of limitations also governs the acceptability of transfer credits. Credits earned outside the Katz School must have been earned within the four-year period of the date of graduation. Credits more than four years old but less than six years as of graduation will be considered for acceptance upon written petition to the associate dean.

Academic Integrity

All students are expected to adhere to the school's Code of Academic Standards, copies of which are available in the dean's office. These standards follow the University's guidelines with several procedure changes. Students may also contact the school's academic integrity officer for advice or clarification of academic integrity guidelines.

Career Management

The Career Management team assists all full-time and professional students, as well as the students in the specialized degree programs. The mission is to be a collaborative career management partner with both students and corporate recruiters, as well as an industry leader in professional development. The team is committed to providing advice in a manner that is designed to tailor a career path to fit each student's unique strengths and professional competencies, and develop and execute a job search plan to secure employment post-graduation. More information on the career management team can be found at https://www.katz.business.pitt.edu/recruiters-and-companies

Masters Programs & Student Services

The goal of the MBA and MS Programs team is exceptional student satisfaction. The Masters Program Office staff are subject matter experts who assist advisors and faculty in the delivery of various Masters Programs. The team also manages student events and activities, including Orientation, Academic Workshops and Professional Skills Development. The Program Office also manages matriculation, registration, curriculum delivery and graduation processes for Masters Students.

The Program advisors are part of the Program Office Student Services team. The advisors are responsible for advising students regarding requirements and procedures of their program. The advisors will verify degree requirements, and are responsible for making sure students stay on track for graduation. The academic advisors work very closely with the career advisors to ensure overall cohesiveness.

Faculty

Katz Graduate School of Business Faculty

Programs & Courses

Business Administration, PhD

Executive Master of Business Administration, MBA
The Executive MBA (EMBA Worldwide) Program is offered in Pittsburgh and Sao Paulo. We offer the academic rigor of the Katz MBA, but in a format tailored to experience professions. Whether our students work in upper management at a corporation, are the founder of a budding startup, or come from a technical background such as engineering or medicine, EMBA Worldwide is designed to help them elevate their careers to new heights.

The program begins in May and ends in October of the subsequent year. Students complete a minimum of 48 academic credits. In addition, the Global Executive Forums (GEF make Katz EMBA Worldwide a truly global experience. You'll travel to three locations (Pittsburgh twice, Prague and Sao Paulo) for a week of study, cultural development activities, and visits with Katz EMBA Worldwide alumni and guest speakers.

For additional program information, contact Christine Kush, Director of Operations, EMBA Worldwide, 515 Alumni Hall, Phone: 412-648-1806, e-mail cakush@katz.pitt.edu or visit www.business.pitt.edu/katz/emba.

Program Requirements

- BACC 2256 - STRATEGIC COST MANAGEMENT
- BACC 2801 - FINANCIAL ACCOUNTING
- BFAE 2801 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISIONS
- BFIN 2306 - FINANCIAL MANAGEMENT
- BMKT 2306 - MARKETING MANAGEMENT
- BMIS 2811 - INFORMATION TECHNOLOGY AND BUSINESS VALUE
- BIND 9661 - LEARNING COMMUNITY WORKSHOP
- BOAH 2422 - MANAGING HUMAN RESOURCES IN A GLOBAL ECONOMY
- BOAH 2519 - NEGOTIATIONS 1
- BOAH 2801 - ORG BEHAV: LDRSHP & GRP EFFECT
- BQOM 2531 - GLOBAL SUPPLY CHAIN MANAGEMENT
- BQOM 2801 - STATSTCL ANAL: UNCERT
- BQOM 2811 - DCSN TECHNLGY IN MFG & OPERATNS
- BSEO 2401 - BUSINESS ETHICS & SOCIAL PERFORM
- BSEO 2407 - STRATEGIC MANAGEMENT
- BSPP 2016 - STRATEGIC VISIONING FOR A GLOBAL FUTURE

Executive Masters of Business Administration Healthcare, MS

The Katz-UPMC Executive MBA in Healthcare (EMBA Healthcare) is designed for healthcare professionals who are seeking to advance their careers; it equips students with the skills and tools that they need to lead healthcare organizations into the future. It is designed for experienced professionals who are looking to take the next step in their careers. The University of Pittsburgh Joseph M. Katz Graduate School of Business and UPMC (University of Pittsburgh Medical Center) created the Katz-UPMC Executive MBA in Healthcare Program to prepare individuals to lead healthcare organizations. The program emphasizes the management and technical skills that healthcare professionals need the most.

The EMBA Healthcare Program begins in May and ends in December of the subsequent year. Students take 48 credits, including 36 credits in the core MBA curriculum, and 12 credits of electives and practicum. Students will meet once a month for two full-day sessions at the University of Pittsburgh's campus. Some courses will be interspersed with guided study or distance learning.

For additional information, contact Leigh Zuccher, Associate Director Recruiting and Business Development, 513 Alumni Hall, Phone: 412-648-1607, e-mail lzuccher@katz.pitt.edu or visit www.emba.pitt.edu.

Program Requirements

- BACC 2801 - FINANCIAL ACCOUNTING
- BFIN 2306 - FINANCIAL MANAGEMENT
- BMIS 2811 - INFORMATION TECHNOLOGY AND BUSINESS VALUE
- BMIS 2911 - INFORMATION TECHNOLOGY AND ELECTRONIC MEDICAL RECORDS
Master of Business Administration - One-Year Program, MBA

MBA Degree Requirements

Students in the one-year program must fulfill the following requirements in order to receive the full-time MBA degree:

1. A minimum of 51 credits of approved graduate work
2. The appropriate distribution of required core courses and elective courses
3. A minimum cumulative grade point average (GPA) of 3.0

Students in the two-year program must fulfill the following requirements in order to receive the full-time MBA degree:

1. A minimum of 57 credits of approved graduate work
2. The appropriate distribution of required core courses and elective courses
3. A minimum cumulative grade point average (GPA) of 3.00

MBA Core Curriculum

The following core courses are required of all full-time MBA students:

- BACC 2401 - FINANCIAL ACCOUNTING
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BIND 2444 - MANAGEMENT SIMULATION CAPSTONE
- BQOM 2421 - DECISION TECHN IN MFG & OPER MGT
- BFIN 2409 - FINANCIAL MANAGEMENT 1
- BMIS 2409 - INFORMATION SYSTEMS
- BMKT 2409 - MARKETING MANAGEMENT
- BSPP 2409 - STRATEGIC MANAGEMENT
- BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS
- BSEO 2401 - BUSINESS ETHICS & SOCIAL PERFORM

Note:

The remaining credits required for the degree are to be taken in the student's area of study and in other elective course work.

Areas of Study

In place of majors, the Katz School offers areas of study in finance, management of information systems, marketing, organizational behavior and human resource management, operations management strategy, and doctoral studies. Students can customize their MBA to suit their career goals by choosing from a wide array of electives in these fields.

Students may also choose to take elective courses through other professional schools at the University including the School of Law, the Swanson School of Engineering, the School of Social Work, the Graduate School of Public and International Affairs, and the School of Information Sciences.

A description of each of the areas of study follows:
Finance

The study of finance is designed to prepare students for managerial careers in corporate finance, investment analysis, financial consulting, and financial institutions. The coursework presents an integrated treatment of the economic foundations of finance, and the functions of capital markets and financial institutions. The courses provide a thorough understanding of how capital and financial markets operate, and how to manage corporate assets and financial claims in the marketplace.

Management of Information Systems

An MBA with a focus in information systems (IS) prepares students to lead and manage by helping them develop their ability to recognize and capitalize on opportunities to use information systems to increase efficiency, support growth, and enable innovation. Though course and project work related to the specification, evaluation, and management of technology-enabled business initiatives, the IS concentrations available within the Katz MBA program prepare student for careers as leaders in both the IS functional area (e.g. CIO, CTO, Director of IT) and in other business areas that rely heavily on information technology for success (e.g. Supply Chain Management, Customer Analytics/Marketing Research, Financial Operation management, etc.).

Students seeking a stronger foundation in the management of IS and greater depth in their MBA specialty should consider the Katz MBA/MS-MIS Dual Degree program. This program combines a full set of MBA courses, a core of IS technical and management courses, and a range of specializations including: IS Management, Supply Chain Management, Customer Analytics, Entrepreneurship/New Venture Creation, and Healthcare and IS.

Marketing

This area of study is designed to prepare students for careers in marketing management. Marketing is a critical decision area not only in commercial (for profit) organizations but also in healthcare, government, educational, and other non-profit institutions. Among the topics discussed are marketing strategy, new product development, marketing research, pricing, distribution, advertising and promotion, brand management, and global marketing.

Organizational Behavior and Human Resources Management

Organizational behavior and human resources management focuses on understanding human behavior at work and developing effective management strategies for maximizing the human capital within organizations. This program examines current issues such as employee involvement, high-performance work systems, and the use of teams within organizations.

Strengths of this area are its interdisciplinary nature that relies on a solid grounding in the behavioral sciences, applied statistics, and economics.

Operations Management, Decision Sciences, and Artificial Intelligence

The "operations" function of a firm deals with the effective production and distribution of goods and services, and thus forms an integral part of the management activity in industries as diverse as banking, financial services, software, telecommunications, electronics, and automobiles. An MBA with a focus in operations prepares students for a line job in such industries as well as for a career in management consulting.

Strategy

Organizations of all sizes and degrees of complexity depend on the planning and implementation skills of their general managers for the attainment of their objectives. The strategic planning and policy field is concerned with the development of frameworks and processes for analyzing and responding to strategic problems and opportunities confronting corporate-level executives and managers of business units.

Ethical Leadership and Public Affairs
This area focuses on the management of public affairs and corporate social policies. Most business firms operate in complex environments where governmental regulations, public policies, social pressure groups, legal and political systems, technological innovations, and ethical standards directly affect managerial decision-making. The strategies and techniques for coping with these environmental forces and for managing a firm's external social relations are given special attention in a series of advanced courses.

Part-Time/Evening MBA Program

The evening program offers nearly the same curriculum and encompasses the same teaching philosophies as the full-time MBA program. The MBA can be earned in three years by taking approximately 6 credits per term. The program runs year-round with fall, spring, and summer trimesters of 13 or 14 weeks each. Classes are conducted on weekday evenings and select weekends.

Admissions

Students are admitted in the fall, spring, and summer terms. Applicants should check the school's Web site for preferred deadlines.

Candidates must have a bachelor's degree from an accredited U.S. school or the non-U.S. equivalent, and demonstrated quantitative competence via academic coursework and GMAT or GRE. Applicants should be able to demonstrate excellent communication and interpersonal skills that are evaluated through written essays, test scores, and/or personal interview.

The Graduate Management Admission Test (GMAT) or the Graduate Record Exam (GRE) is required, and for international applicants, the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) is also a requirement.

Tuition and Fees

http://www.ir.pitt.edu/tuition/index.php

Evening MBA students pay on a per credit basis each term (1.5-8.5 credits considered part-time). In addition to the University-wide fees, a professional workshop fee is required each term.

Academic Probation and Dismissal Policy

If the student's GPA falls below 3.0 upon completion of 12 credits or any time thereafter, the student will be subject to academic probation and/or dismissal from the program. Exceptions to the school's guidelines and procedures may be considered only through written petition to the assistant dean for MBA programs.

Part-Time/Evening Degree Requirements

All students must fulfill the following requirements in order to receive the part-time MBA degree:

1. A minimum of 51 credits of approved graduate work
2. The appropriate distribution of required core courses and elective courses
3. A minimum cumulative grade point average (GPA) of 3.0

Part-Time/Evening MBA Core Curriculum

The following core courses (totaling 22.5 credits) are required of all evening MBA students. Electives are similar to the full-time MBA offerings.

- BACC 2401 - FINANCIAL ACCOUNTING
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS
- BIND 2444 - MANAGEMENT SIMULATION CAPSTONE
One-Year Program

In 1963, the Katz School launched a unique MBA program that presented the classical two-year American MBA format in one calendar year. This is not a general management program, but contains full concentration in all business disciplines—all conducted in parallel with the core of business, arts and sciences, and logistically integrated by the world-class faculty dedicated to the merger of research and teaching.

The one-year MBA is typically for people who do not require an internship to reach their career goals. It begins in May and ends in April and, through its module format, covers the same ground that a traditional MBA program does in two years.

Master of Business Administration - Two-Year Program, MBA

MBA Degree Requirements

Students in the one-year program must fulfill the following requirements in order to receive the full-time MBA degree:

1. A minimum of 51 credits of approved graduate work
2. The appropriate distribution of required core courses and elective courses
3. A minimum cumulative grade point average (GPA) of 3.0

Students in the two-year program must fulfill the following requirements in order to receive the full-time MBA degree:

1. A minimum of 57 credits of approved graduate work
2. The appropriate distribution of required core courses and elective courses
3. A minimum cumulative grade point average (GPA) of 3.00

MBA Core Curriculum

The following core courses are required of all full-time MBA students:

- BACC 2401 - FINANCIAL ACCOUNTING
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BIND 2444 - MANAGEMENT SIMULATION CAPSTONE
- BQOM 2421 - DECISION TECHN IN MFG & OPER MGT
- BFIN 2409 - FINANCIAL MANAGEMENT 1
- BMIS 2409 - INFORMATION SYSTEMS
- BMKT 2409 - MARKETING MANAGEMENT
- BSPP 2409 - STRATEGIC MANAGEMENT
- BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS
- BSEO 2401 - BUSINESS ETHICS & SOCIAL PERFORM

Note:
The remaining credits required for the degree are to be taken in the student's area of study and in other elective course work.

Areas of Study

In place of majors, the Katz School offers areas of study in finance, management of information systems, marketing, organizational behavior and human resource management, operations management strategy, and doctoral studies. Students can customize their MBA to suit their career goals by choosing from a wide array of electives in these fields.

Students may also choose to take elective courses through other professional schools at the University including the School of Law, the Swanson School of Engineering, the School of Social Work, the Graduate School of Public and International Affairs, and the School of Information Sciences.

A description of each of the areas of study follows:

Finance

The study of finance is designed to prepare students for managerial careers in corporate finance, investment analysis, financial consulting, and financial institutions. The coursework presents an integrated treatment of the economic foundations of finance, and the functions of capital markets and financial institutions. The courses provide a thorough understanding of how capital and financial markets operate, and how to manage corporate assets and financial claims in the marketplace.

Management of Information Systems

An MBA with a focus in information systems (IS) prepares students to lead and manage by helping them develop their ability to recognize and capitalize on opportunities to use information systems to increase efficiency, support growth, and enable innovation. Though course and project work related to the specification, evaluation, and management of technology-enabled business initiatives, the IS concentrations available within the Katz MBA program prepare student for careers as leaders in both the IS functional area (e.g. CIO, CTO, Director of IT) and in other business areas that rely heavily on information technology for success (e.g. Supply Chain Management, Customer Analytics/Marketing Research, Financial Operation management, etc.).

Students seeking a stronger foundation in the management of IS and greater depth in their MBA specialty should consider the Katz MBA/MS-MIS Dual Degree program. This program combines a full set of MBA courses, a core of IS technical and management courses, and a range of specializations including: IS Management, Supply Chain Management, Customer Analytics, Entrepreneurship/New Venture Creation, and Healthcare and IS.

Marketing

This area of study is designed to prepare students for careers in marketing management. Marketing is a critical decision area not only in commercial (for profit) organizations but also in healthcare, government, educational, and other non-profit institutions. Among the topics discussed are marketing strategy, new product development, marketing research, pricing, distribution, advertising and promotion, brand management, and global marketing.

Organizational Behavior and Human Resources Management

Organizational behavior and human resources management focuses on understanding human behavior at work and developing effective management strategies for maximizing the human capital within organizations. This program examines current issues such as employee involvement, high-performance work systems, and the use of teams within organizations.

Strengths of this area are its interdisciplinary nature that relies on a solid grounding in the behavioral sciences, applied statistics, and economics.

Operations Management, Decision Sciences, and Artificial Intelligence
The "operations" function of a firm deals with the effective production and distribution of goods and services, and thus forms an integral part of the management activity in industries as diverse as banking, financial services, software, telecommunications, electronics, and automobiles. An MBA with a focus in operations prepares students for a line job in such industries as well as for a career in management consulting.

**Strategy**

Organizations of all sizes and degrees of complexity depend on the planning and implementation skills of their general managers for the attainment of their objectives. The strategic planning and policy field is concerned with the development of frameworks and processes for analyzing and responding to strategic problems and opportunities confronting corporate-level executives and managers of business units.

**Ethical Leadership and Public Affairs**

This area focuses on the management of public affairs and corporate social policies. Most business firms operate in complex environments where governmental regulations, public policies, social pressure groups, legal and political systems, technological innovations, and ethical standards directly affect managerial decision-making. The strategies and techniques for coping with these environmental forces and for managing a firm's external social relations are given special attention in a series of advanced courses.

**Part-Time/Evening MBA Program**

The evening program offers nearly the same curriculum and encompasses the same teaching philosophies as the full-time MBA program. The MBA can be earned in three years by taking approximately 6 credits per term. The program runs year-round with fall, spring, and summer trimesters of 13 or 14 weeks each. Classes are conducted on weekday evenings and select weekends.

**Admissions**

Students are admitted in the fall, spring, and summer terms. Applicants should check the school's Web site for preferred deadlines.

Candidates must have a bachelor's degree from an accredited U.S. school or the non-U.S. equivalent, and demonstrated quantitative competence via academic coursework and GMAT or GRE. Applicants should be able to demonstrate excellent communication and interpersonal skills that are evaluated through written essays, test scores, and/or personal interview.

The Graduate Management Admission Test (GMAT) or the Graduate Record Exam (GRE) is required, and for international applicants, the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) is also a requirement.

**Tuition and Fees**

http://www.ir.pitt.edu/tuition/index.php

Evening MBA students pay on a per credit basis each term (1.5-8.5 credits considered part-time). In addition to the University-wide fees, a professional workshop fee is required each term.

**Academic Probation and Dismissal Policy**

If the student's GPA falls below 3.0 upon completion of 12 credits or any time thereafter, the student will be subject to academic probation and/or dismissal from the program. Exceptions to the school's guidelines and procedures may be considered only through written petition to the assistant dean for MBA programs.

**Part-Time/Evening Degree Requirements**
All students must fulfill the following requirements in order to receive the part-time MBA degree:

1. A minimum of 51 credits of approved graduate work
2. The appropriate distribution of required core courses and elective courses
3. A minimum cumulative grade point average (GPA) of 3.0

Part-Time/Evening MBA Core Curriculum

The following core courses (totaling 22.5 credits) are required of all evening MBA students. Electives are similar to the full-time MBA offerings.

- BACC 2401 - FINANCIAL ACCOUNTING
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS
- BIND 2444 - MANAGEMENT SIMULATION CAPSTONE
- BFIN 2409 - FINANCIAL MANAGEMENT 1
- BMKT 2409 - MARKETING MANAGEMENT
- BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS
- BMIS 2409 - INFORMATION SYSTEMS
- BQOM 2421 - DECISION TECHN IN MFG & OPER MGT
- BSEO 2401 - BUSINESS ETHICS & SOCIAL PERFORM
- BSPP 2409 - STRATEGIC MANAGEMENT

Two-Year Program

The two-year MBA program is built on the solid foundation of the established one-year program. Students begin in August, add a professional internship during the summer, and return in the subsequent fall. After finishing the core curriculum, students may choose up to 34.5 credits from electives across the school. Graduation takes place in April of the second year.

The two-year MBA is typically for people who wish to develop their professional focus, and who need an internship to confirm and advance that professional focus. Individualized coaching and mentoring programs are designed to support the professional growth and development of each student.

Area of Accounting

Accounting

The Katz Accounting Doctoral Program discipline prepares graduates to succeed as accounting scholars and educators at top business schools in the United States and abroad. The program features rigorous coursework, thorough research training and close working relationships between doctoral students and faculty to prepare students to be leading accounting academics. Our graduates have an excellent track record of placements at research-oriented business schools and in succeeding in those environments.

Accounting students must complete a total of 15 seminars/courses (17 courses if they do not exempt the MBA course requirement). This includes eight courses in their major area of study within accounting, at least four courses in research methodology, and at least three courses in a minor area of study. Students may instead choose to complete eight courses in their major area and seven total courses in research methodology for a research methodology minor. Students should choose individually approved seminars and courses from the enclosed list of Katz seminars and courses, as well as from approved University of Pittsburgh seminars and courses. Finally, on a limited basis students may also cross-register into approved seminars and courses at other institutions to support their overall program of study. Each program of study must be approved by the student's faculty advisor and the Director of the Katz Doctoral Program. Any subsequent seminar/course changes must also be approved.

To achieve the fifteen course total, accounting doctoral students typically complete Katz accounting doctoral seminars (BACC 3000 and above) that may include the courses listed below. Students will take additional coursework in areas such as Finance, Econometrics, Game Theory, Cognitive Psychology, Experimental Design and other areas as appropriate. These remaining courses toward the student's program of study must be approved in
advance by the Accounting faculty and the Katz Doctoral Program Director. Students are also required to register for independent study courses and independent dissertation work/credits to complete the degree requirements.

Accounting doctoral students are provided with up to five years (14 terms) of financial support in the form of Graduate Student Assistantship, Teaching Assistant or Teaching Fellow. Typically students provide research assistance to their faculty mentors for approximately four years and provide teaching and teaching assistance for up to one year. The financial assistance is awarded one year at a time.

Curriculum

The following accounting seminars are offered by the Katz Doctoral Program (subject to student enrollment):

- BACC 3001 - INTRODUCTION TO ACCOUNTING RESEARCH
- BACC 3010 - INDEPENDENT STUDY IN ACCOUNTING
- BACC 3014 - EXPERIMENTAL RESEARCH IN ACCOUNTING
- BACC 3017 - ACCOUNTING WORKSHOP
- BACC 3021 - ARCHIVAL RESEARCH IN MANAGERIAL ACCOUNTING
- BACC 3050 - CRITICAL THINKING IN ACCOUNTING
- BACC 3052 - CRITICAL THINKING IN ACCOUNTING II
- BACC 3099 - READINGS IN ACCOUNTING
- FTDF 0000 - FULL-TIME DISSERTATION STUDY

Accounting and Business Analytics, MS (STEM-designated)

Differentiate yourself with this STEM-designated program which prepares students to pass the CPA while gaining technical skills in multivariate data analysis, data programming, data mining, and database management. In addition, the program prepares students to pass the CPA Exam, both by covering the content areas of the exam and by satisfying the 150 credit-hour requirement of Pennsylvania and many other U.S. states.

Students enrolled in this program must complete the appropriate number of prerequisite, required, and elective courses according to program requirements, and maintain a minimum GPA of 3.0.

Required Courses (Required total: 40.5 credits):

- BACC 2251 - FORENSIC ACCOUNTING
- BACC 2558 - NON-PROFIT AND GOVERNMENTAL ACCOUNTING
- BACC 2254 - ADVANCED FINANCIAL ACCOUNTING
- BACC 2258 - STRATEGIC COST MANAGEMENT
- BACC 2559 - INDIVIDUAL TAX ACCOUNTING AND PLANNING
- BACC 2252 - CORPORATE TAX ACCOUNTING AND PLANNING
- BACC 2525 - FINANCIAL STATEMENT ANALYSIS
- BSEO 2315 - BUSINESS LAW
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BQOM 2421 - DECISION TECHN IN MFG & OPER MGT
- BQOM 2512 - ADVANCED DECISION TECHNOLOGY
- BQOM 2557 - MULTIVARIATE DATA ANALYSIS 1
- BMIS 2588 - DATA BASE MANAGEMENT
- BQOM 2578 - DATA MINING

Programming course (choose one):

- BMIS 2542 - DATA PROGRAMMING WITH PYTHON
BMIS 2526 - DATA PROGRAMMING WITH R

Elective Courses (Required minimum 3.0 credits):

- BACC 2523 - ACCOUNTING DATA ANALYTICS

Programming course (choose one):

- BMIS 2542 - DATA PROGRAMMING WITH PYTHON
- BMIS 2526 - DATA PROGRAMMING WITH R

Accounting, MS

The Master of Science in Accounting is a 30 credit program designed to be completed in two terms, on a full-time basis. The program prepares students for leadership roles in financial accounting and managerial accounting. Students gain general business knowledge and specialized accounting skills necessary for success. In addition, the program prepares students to pass the CPA Exam, both by covering the content areas of the exam and by satisfying the 150 credit-hour requirement of Pennsylvania and many other U.S. states.

Students enrolled in this program must complete the appropriate number of prerequisite, required, and elective courses according to program requirements, and maintain a minimum GPA of 3.0.

Required Courses (Required total: 24 credits):

- BACC 2251 - FORENSIC ACCOUNTING
- BACC 2558 - NON-PROFIT AND GOVERNMENTAL ACCOUNTING
- BACC 2254 - ADVANCED FINANCIAL ACCOUNTING
- BACC 2258 - STRATEGIC COST MANAGEMENT
- BACC 2252 - CORPORATE TAX ACCOUNTING AND PLANNING
- BACC 2525 - FINANCIAL STATEMENT ANALYSIS
- BSEO 2315 - BUSINESS LAW
- BACC 2559 - INDIVIDUAL TAX ACCOUNTING AND PLANNING

Elective Courses (Required minimum: 6 credits):

- BACC 2542 - ACCOUNTING AND FINANCE LAW
- BACC 2543 - TAX POLICY 1
- BACC 2544 - TAX POLICY 2
- BACC 2557 - ACCOUNTING RESEARCH AND WRITING
- BACC 2541 - SEC REPORTING AND DISCLOSURE
- BACC 2466 - RISK MANAGEMENT AND COMPLIANCE ISSUES FACING INTERNATIONAL ORGANIZATIONS
- BACC 2523 - ACCOUNTING DATA ANALYTICS
- BACC 2534 - CONTROLLERSHIP
- BACC 2524 - INTERNAL AUDIT: RISK & ADVISORY
- BACC 2540 - INTERNATIONAL TAXATION
- BACC 2100 - MACC INTERNSHIP

Area of Business Analytics and Operations
Business Analytics and Operations

The Business Analytics and Operations discipline offers flexible options for a doctoral student in a variety of related research topics including Supply Chain Management, Data Mining and Business Analytics, Decision Sciences, Project Management, Revenue Management, Simulation Methodology, Stochastic Modeling and Applied Statistical Methods, and Business Analytics. These programs require coursework for two years, followed by a period of dissertation-related research. The doctoral program prepares students for a career in teaching and research at institutions of higher learning.

Business Analytics and Operations students must complete a total of 15 seminars/courses (17 courses if they do not exempt the MBA course requirement). This includes eight courses in their major area of study within Business Analytics and Operations, at least four courses in research methodology, and at least three courses in a minor area of study. Students may instead choose to complete eight courses in their major area and seven total courses in research methodology for a research methodology minor. Students should choose individually approved seminars and courses from the enclosed list of Katz seminars and courses (BQOM 3000 and above), as well as from approved University of Pittsburgh seminars and courses. Finally, on a limited basis students may also cross-register into approved seminars and courses at other institutions to support their overall program of study. Each program of study must be approved by the student's faculty advisor and the Director of the Katz Doctoral Program. Any subsequent seminar/course changes must also be approved.

To achieve the fifteen course total, Business Analytics and Operations doctoral students will complete Katz doctoral seminars (BQOM 3000 and up) that may include Linear and Nonlinear Programming, Simulation, Statistics, Stochastic Processes, Decision Theory, Current Topics in Operations, Value Chain, Data Mining, Business Analytics, Project Management, and Readings in Operations. Students may also take additional coursework from Katz seminars in other disciplines such as Marketing or Finance. They may request courses from the Industrial Engineering Department and from other University of Pittsburgh approved graduate courses in addition to approved courses from other cross-registration eligible institutions.

The following business analytics and operations doctoral seminars may be offered by the Katz Doctoral Program (subject to student enrollment). Students may supplement their programs of study with additional courses as noted. The following list suggests seminars and courses that students may use, with the permission of their advisors and the Katz Doctoral Program Director, to satisfy the course work phase of their programs of study.

Curriculum

Business Analytics and Operations doctoral students are provided with up to five years (14 terms) of financial support. Typically students provide research assistance to their faculty mentors for approximately four years and provide teaching and teaching assistance for up to one year.

- BQOM 3016 - CURRENT TOPICS IN OPERATIONS
- BQOM 3020 - SIMULATION
- BQOM 3023 - DATA MINING SEMINAR
- BQOM 2512 - ADVANCED DECISION TECHNOLOGY
- BQOM 3099 - READINGS IN OPERATIONS RESEARCH
- BFAE 3001 - MICROECONOMICS
- IE 2081 - NONLINEAR OPTIMIZATION
- IE 2100 - SUPPLY CHAIN ANALYSIS
- IE 2007 - STATISTICS AND DATA ANALYSIS
- IE 3094 - MARKOV DECISION PROCESSES
- PSYED 3408 - HIERARCHICAL LINEAR MODELING
- PSYED 3417 - STRUCTURAL EQUATION MODELING
- BUSADM 3199 - RESEARCH AND DISSERTATION PHD
- FTDF 0000 - FULL-TIME DISSERTATION STUDY

Supply Chain Management and Business Analytics, MS (STEM-designated)

This STEM-designated program combines broad supply chain knowledge in sourcing, logistics, planning, process improvement, inventory, and pricing with in-depth business analytics skills in data analysis, data mining, data programming, and database management. Streamline process, manage risk, and deliver results in today's global business environment.
Students enrolled in this program must complete the appropriate number of prerequisite, required, and elective courses according to program requirements, and maintain a minimum GPA of 3.0.

Required Courses (Required total: 28.5 credits):

- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BQOM 2421 - DECISION TECHN IN MFG & OPER MGT
- BQOM 2511 - REVENUE MANAGEMENT AND PRICING ANALYTICS
- BQOM 2512 - ADVANCED DECISION TECHNOLOGY
- BQOM 2523 - PROCESS ENGINEERING
- BQOM 2533 - GLOBAL SUPPLY CHAIN MANAGEMENT
- BQOM 2534 - STRATEGIC PROCUREMENT AND SOURCING MANAGEMENT
- BQOM 2557 - MULTIVARIATE DATA ANALYSIS 1
- BQOM 2578 - DATA MINING
- BMIS 2074 - STRATEGIC INFORMATION TECHNOLOGY IN GLOBAL SUPPLY CHAINS
- BMIS 2526 - DATA PROGRAMMING WITH R
- BMIS 2588 - DATA BASE MANAGEMENT
- EBL requirement: BIND 2024 - CONSULTING FIELD PROJECT; BIND 27** Global Research Practicum; OR Internship that has been approved by the faculty director (may substitute BQOM 2139 with faculty director approval)

Supply Chain Elective Courses (Minimum 6.0 credits):

- BQOM 2139 - SIX SIGMA THEORY AND PRACTICE
- BQOM 2524 - PROD MGT & PROCESS IMPROVEMENT
- BQOM 2546 - PROJECT MANAGEMENT FUNDAMENTALS AND ANALYTICS
- BQOM 2501 - ENTERPRISE SYSTEMS AND INTEGRATION OF BUSINESS PROCESSES

Analytics Elective Courses (Minimum 3.0 credits):

- BQOM 2537 - FORECASTING
- BMKT 2544 - SHOPPER ANALYTICS
- BMIS 2542 - DATA PROGRAMMING WITH PYTHON

Business Elective Courses (Minimum 1.5 credits):

- BFIN 2409 - FINANCIAL MANAGEMENT 1
- BMKT 2306 - MARKETING MANAGEMENT
- BOAH 2532 - NEGOTIATIONS, TEAMWORK AND CHANGE 1
- BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS
- BOAH 2456 - MANAGING OFFSHORE OUTSOURCING
- BSEO 2511 - MGMNT OF STRATEGIC ALLIANCES 1

Supply Chain Management, MS

The Master of Science in Supply Chain Management is a 30 credit program designed to be completed in two terms, on a full-time basis. The program provides students with broad supply chain knowledge and technical skills in sourcing, logistics, planning, inventory, pricing, and consulting. The program has a strong interdisciplinary flavor, letting students select from a wide range of electives that relate to everything from information technology, to accounting, to strategy.
Required Courses (Required total: 16.5 credits):

- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BQOM 2421 - DECISION TECHN IN MFG & OPER MGT
- BQOM 2533 - GLOBAL SUPPLY CHAIN MANAGEMENT
- BMIS 2074 - STRATEGIC INFORMATION TECHNOLOGY IN GLOBAL SUPPLY CHAINS
- BQOM 2534 - STRATEGIC PROCUREMENT AND SOURCING MANAGEMENT
- BQOM 2523 - PROCESS ENGINEERING
- BQOM 2511 - REVENUE MANAGEMENT AND PRICING ANALYTICS
- EBL requirement: BIND 2024 - CONSULTING FIELD PROJECT, BIND 27** Global Research Practicum; or Internship that has been approved by the faculty director (may substitute BQOM 2139 with faculty director approval) 3 cr.

Supply Chain Elective Courses (Minimum 9.0 credits):

- BQOM 2139 - SIX SIGMA THEORY AND PRACTICE
- BQOM 2512 - ADVANCED DECISION TECHNOLOGY
- BQOM 2524 - PROD MGT & PROCESS IMPROVEMENT
- BQOM 2537 - FORECASTING
- BQOM 2546 - PROJECT MANAGEMENT FUNDAMENTALS AND ANALYTICS
- BMIS 2551 - PROJECT MANAGEMENT CONCEPTS AND PROCESSES
- BQOM 2557 - MULTIVARIATE DATA ANALYSIS 1
- BQOM 2578 - DATA MINING
- BQOM 2501 - ENTERPRISE SYSTEMS AND INTEGRATION OF BUSINESS PROCESSES

Business Elective Courses (Up to 4.5 credits):

- BECN 2509 - GLOBAL MACROECONOMICS 1
- BFIN 2409 - FINANCIAL MANAGEMENT 1
- BMKT 2409 - MARKETING MANAGEMENT
- BMKT 2526 - PRODUCT DEVELOPMENT & MANAGEMENT
- BMKT 2544 - SHOPPER ANALYTICS
- BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS
- BOAH 2456 - MANAGING OFFSHORE OUTSOURCING
- BOAH 2532 - NEGOTIATIONS, TEAMWORK AND CHANGE 1
- BQOM 2904 - PROBLEM SOLVING AND CREATIVITY
- BSEO 2511 - MGMNT OF STRATEGIC ALLIANCES 1

Business Analytics Certificate

The Graduate Certificate in Business Analytics is designed as a 15-credit program to be completed over the academic year (August - April), with a curriculum comprised of core and elective courses currently offered to Katz Masters students.

Experience-Based Learning (EBL) Requirement

The Business Analytics certificate program will have a strong EBL component. All students in the program will be involved in projects that focus on solving business problems, which involve data management, modeling, programming, and decision analysis.
Curriculum

The curricular requirements of the Graduate Certificate in Business Analytics will help students develop the necessary knowledge of business analysis for the specialization.

Core: 12 Credits

- BQOM 2578 - DATA MINING
  or
- BUSSCM 1760 - DATA MINING
- BQOM 2557 - MULTIVARIATE DATA ANALYSIS 1
- BQOM 2512 - ADVANCED DECISION TECHNOLOGY
- BMIS 2588 - DATA BASE MANAGEMENT

And Select One:

- BMIS 2542 - DATA PROGRAMMING WITH PYTHON
  or
- BMIS 2526 - DATA PROGRAMMING WITH R

Electives: 3 Credits

- BQOM 2537 - FORECASTING
- BQOM 2559 - APPLIED SIMULATION AND OPTIMIZATION
- BQOM 2558 - MULTIVARIATE DATA ANALYSIS 2
- BMIS 2542 - DATA PROGRAMMING WITH PYTHON If not taken as required
- BMIS 2526 - DATA PROGRAMMING WITH R If not taken as required

Other Business Analytics electives proposed by areas can be counted as elective(s) with MPC approval

Area of Finance

Finance

The finance discipline doctoral program seeks to prepare students to make significant contributions to the existing body of academic research in corporate finance, mergers and acquisitions, capital structure, internal firm organization, corporate diversification, corporate restructuring, financial institutions and investments and others. The program produces graduates that can independently identify important research questions and carry out theoretical and empirical investigation at levels suitable for publication in the top academic journals. The finance faculty works closely with students to develop suitable research topics and very often collaborates with students on joint research. In short, we strive for our graduates to obtain academic placements at top research institutions.

Finance students take courses from both the University of Pittsburgh Katz Graduate School of Business and the Department of Economics as part of their training. The finance faculty offers seminars that provide the core of the doctoral students' training. These seminars introduce the theoretical underpinnings of finance. Beyond these seminars, students are expected to take additional finance seminars that focus on their chosen areas of interest. Since strong methodological skills are critical to a successful scholarly career, finance doctoral students typically also take courses in econometrics, statistics, and mathematical methods. Students are free to matriculate into courses within the Katz school, other colleges at the University of Pittsburgh (such as Statistics or Mathematics), or at Carnegie Mellon University.

A minimum of eight major and seven methodology-related courses are necessary to fulfill coursework requirements. Students typically pursue four courses per semester for two years prior to taking their comprehensive exams in late summer following their second year.
Students are also required to complete an independent research proposal/paper and submit it to the finance faculty at the end of the spring in their second year of study. It is anticipated that this proposal will eventually develop into a publishable research article; however, the main goal of the assignment is for students to gain experience in identifying important research questions and carrying out theoretical and empirical investigation of these questions.

The following finance doctoral seminars are offered by the Katz Doctoral Program (subject to student enrollment):

### Curriculum

The following finance doctoral seminars are offered by the Katz Doctoral Program (subject to student enrollment):

- BFIN 3000 - FINANCE FUNDAMENTALS
- BFIN 3010 - INDEPENDENT STUDY IN FINANCE
- BFIN 3016 - ADVANCED TOPICS IN FINANCE
- BFIN 3031 - CORPORATE FINANCE THEORY AND METHODS
- BFIN 3032 - CORPORATE FINANCE SEMINAR 1
- BFIN 3033 - CORPORATE FINANCE SEMINAR 2
- BFIN 3034 - CORPORATE FINANCE SEMINAR 3
- BFIN 3035 - FINANCIAL EMPIRICAL METHODS
- BFIN 3036 - EMPIRICAL ASSET PRICING
- BFIN 3037 - FINANCE SEMINAR IN MARKET MICROSTRUCTURE
- BFIN 3038 - PROPERTY RIGHTS AND THEORY OF THE FIRM
- BFIN 3099 - READINGS IN FINANCE
- BUSADM 3199 - RESEARCH AND DISSERTATION PHD
- FTDF 0000 - FULL-TIME DISSERTATION STUDY

### Additional

The Economics, Math, and cross-registered courses may include:

- ECON 2001 - INTRO TO MATHEMATICAL METHODS
- ECON 2010 - MATHEMATICAL METH ECON ANALYSIS
- ECON 2020 - INTRO TO ECONOMETRIC THEORY
- ECON 2100 - ADVANCED MICROECONOMIC THEORY 1
- ECON 2120 - ADVANCED MICROECONOMIC THEORY 2
- ECON 2260 - ADVANCED ECONOMETRICS 1
- MATH 3225 - MATHEMATICS OF FINANCE 1
- CMU 0723 Seminar in Finance 1-4

### Note

Finance doctoral students are provided with up to five years (14 terms) of financial support. Typically students provide research assistance to their faculty mentors for approximately four years and provide teaching and teaching assistance for up to one year.

### Finance and Business Analytics, MS (STEM-designated)

Differentiate yourself with this STEM-designated program which allows students to master the quantitative and qualitative aspects of Finance--valuation techniques, forecasting methods, application of time value of money, building pro-forma financial statements, managing corporate finance functions, and investing & portfolio management. In addition, students will learn data mining, multivariate data analysis, programming, and database management to enable powerful financial decision-making.
Students enrolled in this program must complete the appropriate number of prerequisite, required, and elective courses according to program requirements, and maintain a minimum GPA of 3.0.

Required Courses (Required total: 39.0 credits):

- BACC 2401 - FINANCIAL ACCOUNTING
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BFIN 2409 - FINANCIAL MANAGEMENT 1
- BFIN 2410 - FINANCIAL MANAGEMENT 2
- BFIN 2145 - FINANCIAL MODELING
- BFIN 2039 - INVESTMENT MANAGEMENT/CAPITAL MARKETS
- BFIN 2036 - CORPORATE FINANCE
- BFIN 2030 - VALUATION 1
- BMIS 2542 - DATA PROGRAMMING WITH PYTHON
- BQOM 2421 - DECISION TECHN IN MFG & OPER MGT
- BQOM 2512 - ADVANCED DECISION TECHNOLOGY
- BQOM 2557 - MULTIVARIATE DATA ANALYSIS 1
- BQOM 2578 - DATA MINING
- BMIS 2588 - DATA BASE MANAGEMENT
- BMIS 2526 - DATA PROGRAMMING WITH R

Elective Courses (Required minimum: 6.0 credits):

- BFIN 2015 - SHORT-TERM FINANCING
- BFIN 2042 - ACQUISITION OF PRIVATELY HELD COMPANIES
- BFIN 2043 - INTERNATIONAL FINANCIAL MANAGEMENT
- BFIN 2051 - INTRODUCTION TO DERIVATIVES
- BFIN 2068 - MARKETS AND TRADING
- BFIN 2069 - FIXED INCOME SECURITIES
- BFIN 2130 - VALUATION 2
- BFIN 2140 - REAL ESTATE FINANCE

Finance, MS

The Master of Science in Finance is a 30 credit program designed to be completed in two terms, on a full-time basis. The program provides students with a broad overview of the quantitative and qualitative aspects of finance, helping them understand what steps should be taken to maximize shareholder wealth. Students learn the technical skills of everything from valuation techniques, to forecasting methods, to the application of the time value of money, to building pro-forma financial statements.

Students enrolled in this program must complete the appropriate number of prerequisite, required, and elective courses according to program requirements, and maintain a minimum GPA of 3.0.

Required Courses (Required total: 22.5 credits):

- BACC 2401 - FINANCIAL ACCOUNTING
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BFIN 2409 - FINANCIAL MANAGEMENT 1
Elective Courses (Required minimum: 7.5 credits):

- BFIN 2015 - SHORT-TERM FINANCING
- BFIN 2042 - ACQUISITION OF PRIVATELY HELD COMPANIES
- BFIN 2043 - INTERNATIONAL FINANCIAL MANAGEMENT
- BFIN 2051 - INTRODUCTION TO DERIVATIVES
- BFIN 2068 - MARKETS AND TRADING
- BFIN 2069 - FIXED INCOME SECURITIES
- BFIN 2130 - VALUATION 2

Area of Information Systems and Technology Management

Information Systems and Technology Management

The doctoral program discipline in Information Systems and Technology Management prepares students for successful scholarly careers in research universities. The program provides students with theoretical knowledge and methodological skills to enable them to become productive researchers. Students in Information Systems and Technology Management study problems that practicing IS professionals and managers face as they design, use, and apply information systems and technologies to solve business problems.

Information Systems and Technology Management students must complete a total of 15 seminars/courses (17 courses if they do not exempt the MBA course requirement). This includes eight courses in their major area of study within Information Systems and Technology Management, at least four courses in research methodology, and at least three courses in a minor area of study. Students may instead choose to complete eight courses in their major area and seven total courses in research methodology for a research methodology minor. Students should choose individually approved seminars and courses from the enclosed list of Katz seminars and courses, as well as from approved University of Pittsburgh seminars and courses. Finally, on a limited basis students may also cross-register into approved seminars and courses at other institutions to support their overall program of study. Each program of study must be approved by the student's faculty advisor and the Director of the Katz Doctoral Program. Any subsequent seminar/course changes must also be approved.

To achieve the fifteen course total, Information Systems and Technology Management doctoral students typically complete Katz ISTM doctoral seminars (BMIS 3000 and above) as noted below and combine these with choices from other disciplines, for example from Psychology or Statistics.

BMIS 3012 - FDS INFORMATION SYSTEMS RESEARCH. Students are strongly encouraged to register for all seminars offered by the ISTM faculty. See list below.

ISTM doctoral students are provided with up to five years (14 terms) of financial support in the form of Graduate Student Assistantship, Teaching Assistant or Teaching Fellow. Typically students provide research assistance to their faculty mentors for approximately four years and provide teaching and teaching assistance for up to one year.

Curriculum

The following ISTM seminars may be offered toward the major by the Katz Doctoral Program (subject to student enrollment):

- BMIS 3010 - INDEP STUDY MGT INFOR SYSTEMS
Management Information Systems, MS (STEM-designated)

This program equips students with both the technical and business skills needed to manage an organization's IT resources. The MS in Management Information Systems is a STEM-designated program and can also be pursued with a Graduate Certificate in Business Analytics, as a dual degree with the MBA or in a part-time format.

Students enrolled in this program must complete the appropriate number of prerequisite, required, and elective courses according to program requirements, and maintain a minimum GPA of 3.0.

Required Courses (Required total: 13.5 credits):

- BMIS 2409 - INFORMATION SYSTEMS
- BMIS 2537 - BUSINESS SYSTEMS PLATFORMS
- BMIS 2056 - MGT INFORMATION SYSTEMS PRACM
- BMIS 2551 - PROJECT MANAGEMENT CONCEPTS AND PROCESSES
- BMIS 2588 - DATA BASE MANAGEMENT

Elective Courses (Required minimum: 6 credits):

- BMIS 2034 - INFORMATION TECHNOLOGY GOVERNANCE
- BMIS 2053 - HUMAN FACTORS IN INFORMATION SYSTEMS DESIGN
- BMIS 2074 - STRATEGIC INFORMATION TECHNOLOGY IN GLOBAL SUPPLY CHAINS
- BMIS 2501 - ENTERPRISE SYSTEMS AND INTEGRATION OF BUSINESS PROCESSES
- BMIS 2542 - DATA PROGRAMMING WITH PYTHON
- BMIS 2526 - DATA PROGRAMMING WITH R
- BMIS 2679 - TECHNOLOGY INNOVATION, ADOPTION, AND DIFFUSION

Area of Marketing and Business Economics

Marketing

The marketing doctoral program discipline seeks to prepare students to contribute to the marketing discipline via the discovery, development, and dissemination of knowledge. The program is designed to equip students with the requisite theoretical background and methodological skills for successful scholarly careers at institutions of higher learning. The marketing group feels strongly that the apprenticeship model is the most efficacious approach to doctoral training and, to that end, students typically engage immediately in research projects with faculty. Recent students have been successful in publishing these projects in leading journals such as the Journal of Consumer Research, the Journal of Marketing Research, and the Journal of Marketing.

The marketing interest group offers seminars that provide the theoretical core of marketing doctoral students' training. These seminars introduce the central conceptual and phenomenological aspects of the marketing field, as well as the methodological approaches employed in their examination.
Since the field of marketing scholarship segments into consumer behavior, modeling, and marketing management, seminars are offered in each of these areas, plus a methodological and marketing theory seminar.

- BMKT 3001 - CONSUMER BEHAVIOR 1
- BMKT 3002 - CONSUMER BEHAVIOR 2
- BMKT 3010 - INDEPENDENT STUDY IN MARKETING
- BMKT 3014 - MARKETING STRATEGY
- BMKT 3017 - MARKETING MODELS
- BMKT 3018 - SPECIAL TOPICS IN MARKETING
- BMKT 3025 - MARKET BEHAVIOR RESEARCH
- BMKT 3099 - READINGS IN MARKETING
- BUSADM 3199 - RESEARCH AND DISSERTATION PHD
- FTDF 0000 - FULL-TIME DISSERTATION STUDY

Beyond these seminars, students are expected to take additional seminars (the minimum major course requirement is eight courses) that focus on their chosen area of interest. Students are free to matriculate into courses within the Katz School, other departments at the University of Pittsburgh (such as Psychology, Economics, or Statistics), or at Carnegie Mellon University.

Since strong methodological skills are critical to a successful scholarly career, marketing doctoral students typically take seven or more courses in analytical methods, statistics, and/or econometrics (the minimum course requirement for a combined research methods/minor is seven). A focus in analytical methods or advanced statistics is the norm. Below is a list of some of the topics offered to satisfy this requirement. These topics are offered University-wide, within Katz, or at Carnegie Mellon University. Other choices may be proposed by the student and approved by the faculty advisor.

- Analysis of Variance
- Probability Theory
- Experimental Design
- Multivariate Statistics
- Mathematical Statistics
- Introduction to Econometric Theory
- Human Judgment and Decision Making
- Behavioral Economics
- Katz Microeconomics
- Learning and Memory
- Advanced Data Analysis
- Advanced Topics in Emotion and Decision Making

Students are required to complete an independent research paper and submit it to the marketing faculty in the summer of their first year of study (third term). It is anticipated that this paper will develop into a publishable research article.

Marketing doctoral students are provided with up to five years (14 terms) of financial support in the form of Graduate Student Assistantship, Teaching Assistant or Teaching Fellow. Typically students provide research assistance to their faculty mentors for approximately four years and provide teaching and teaching assistance for up to one year.

**Marketing Science and Business Analytics, MS (STEM-designated)**

Differentiate yourself with this STEM-designated program which allows students to gain technical skills in multivariate data analysis, data programming, data mining, and database management. In addition, the program helps students develop an in-depth understanding of consumer behavior through the study of customer insights, research techniques, digital marketing, and social media marketing with advanced data analysis and decision making techniques and skill.

Students enrolled in this program must complete the appropriate number of required and elective courses according to program requirements, and maintain a minimum GPA of 3.0.

**Required Courses (Required total: 36.0 credits):**
Elective Courses (Required minimum: 4.5 credits):

- BMKT 2032 - APPLIED BEHAVIORAL ECONOMICS
- BMKT 2569 - BRAND MANAGEMENT
- BMKT 2532 - PRICING STRATEGIES AND TACTICS
- BMKT 2526 - PRODUCT DEVELOPMENT & MANAGEMENT
- BQOM 2546 - PROJECT MANAGEMENT FUNDAMENTALS AND ANALYTICS
- BMIS 2551 - PROJECT MANAGEMENT CONCEPTS AND PROCESSES
- BIND 2024 - CONSULTING FIELD PROJECT
- BMIS 2542 - DATA PROGRAMMING WITH PYTHON
- BMIS 2526 - DATA PROGRAMMING WITH R

Marketing Science, MS

The Master of Science in Marketing Science is a 30 credit program designed to be completed in two terms, on a full-time basis. The program prepares students for the future of marketing, offering a broad introduction to marketing alongside in-depth study of customer insights, research techniques, data analytics, digital marketing, and social media marketing. Students learn how to build effective marketing strategies based on data and the latest technological tools.

Students enrolled in this program must complete the appropriate number of required and elective courses according to program requirements, and maintain a minimum GPA of 3.0.

Required Courses (Required total: 22.5 credits):

- BMKT 2409 - MARKETING MANAGEMENT
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS
- BMKT 2031 - MARKETING RESEARCH
- BMKT 2544 - SHOPPER ANALYTICS
- BMKT 2551 - DIGITAL AND SOCIAL MEDIA ANALYTICS
Elective Courses (Required minimum: 7.5 credits):

- BMKT 2032 - APPLIED BEHAVIORAL ECONOMICS
- BMKT 2526 - PRODUCT DEVELOPMENT & MANAGEMENT
- BMKT 2532 - PRICING STRATEGIES AND TACTICS
- BMKT 2569 - BRAND MANAGEMENT
- BQOM 2546 - PROJECT MANAGEMENT FUNDAMENTALS AND ANALYTICS
- BQOM 2578 - DATA MINING
- BIND 2024 - CONSULTING FIELD PROJECT
- BMIS 2542 - DATA PROGRAMMING WITH PYTHON
- BMIS 2526 - DATA PROGRAMMING WITH R
- BMIS 2551 - PROJECT MANAGEMENT CONCEPTS AND PROCESSES

Area of Organizations and Entrepreneurship

Organizational Behavior and Human Resources Management

The OBHR doctoral program discipline focuses on preparing students to impact the study of people, process and outcomes within the fields of organizational behavior and human resources management. Through research, collaboration and dissemination of knowledge, students understand how to impact organizational effectiveness in a variety of different environments, industries and across multiple levels of analyses. Our expectation is that students will craft a program of research that is built upon rigorous theory as well as strong methodological skills that are both necessary for effective scholarship. We encourage collaboration with OBHR faculty that has a proven track record of publishing within a variety of top outlets.

Organizational Behavior and Human Resources Management students must complete a total of 15 seminars/courses (17 courses if they do not exempt the MBA course requirement). This includes eight courses in their major area of study within Organizational Behavior and Human Resources Management, at least four courses in research methodology, and at least three courses in a minor area of study. Students may instead choose to complete eight courses in their major area and seven total courses in research methodology for a research methodology minor. Students should choose individually approved seminars and courses from the enclosed list of Katz seminars and courses, as well as from approved University of Pittsburgh seminars and courses. For example students often choose psychology, decision sciences, statistics and research methodology to name a few. Finally, on a limited basis students may also cross-register into approved seminars and courses at other institutions to support their overall program of study. Each program of study must be approved by the student's faculty advisor and the Director of the Katz Doctoral Program. Any subsequent seminar/course changes must also be approved.

Organizational Behavior and Human Resources Management doctoral students are provided with up to five years (14 terms) of financial support in the form of Graduate Student Assistantship, Teaching Assistant or Teaching Fellow. Typically students provide research assistance to their faculty mentors for approximately four years and provide teaching and teaching assistance for up to one year.

Curriculum

The following OBHR seminars are offered by the Katz Doctoral Program (subject to student enrollment):

- BOAH 3002 - FOUNDATIONS OF ORGANIZATIONAL BEHAVIOR
- BOAH 3027 - OBHR RESEARCH WORKSHOP I
- BOAH 3028 - OBHR RESEARCH WORKSHOP II
- BOAH 3099 - RDGS ORGNZTNL BEHAVIOR/HR MGT
- BORG 3010 - INDEP STUDY ORGNZTNL STUDIES
Organization and Entrepreneurship, MS

The following courses are offered through the Organizations and Entrepreneurship Department:

BHRM 2023 - HUMAN RESOURCES PLANNING/STRATEGY 1
BHRM 2024 - HUMAN RESOURCES PLANNING/STRATEGY 2
BHRM 2060 - INDEPENDENT STUDY HUMAN RESOURCES MANAGEMENT
BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS
BOAH 2423 - MANAGING HUMAN CAPITAL
BOAH 2456 - MANAGING OFFSHORE OUTSOURCING
BOAH 2517 - INTERPERSONAL SKILLS MANAGERS 1
BOAH 2521 - STAFFING ORGANIZATIONS
BOAH 2522 - COMPENSATION
BOAH 2527 - CROSS CULTURAL DIMN INT'L MGT
BOAH 2532 - NEGOTIATIONS, TEAMWORK AND CHANGE 1
BOAH 2537 - CONFLICT RESOLUTION IN THE WORKPLACE 1
BSEO 2012 - SOCIAL ENTREPRENEURSHIP
BSEO 2033 - MANAGING THE NATURAL ENVIRONMENT
BSEO 2034 - SUSTAINABILITY AND CORPORATE RESPONSIBILITY
BSEO 2316 - BUSINESS LAW
BSEO 2401 - BUSINESS ETHICS & SOCIAL PERFORM
BSEO 2509 - BUSINESS AND POLITICS
BSEO 2500 - BENCHTOP TO BEDSIDE
BSEO 2506 - COMPETING EMERGING ECONOMIES
BSEO 2509 - BUSINESS AND POLITICS
BSEO 2511 - MGMT OF STRATEGIC ALLIANCES 1
BSEO 2316 - BUSINESS LAW
BSEO 2525 - COMPETITIVE INTELLIGENCE
BSEO 2528 - LEGAL ENVIRONMENT OF BUSINESS 1
BSEO 2531 - ENTREP & NEW VENTURE INITIATION
BSEO 2538 - STRATEGIC LEADERSHIP
BSEO 2543 - ACQUISITION & DIVESTMENT ANALYS
BSPP 2111 - COMMERCIALIZING NEW TECHNOLOGIES
BSPP 2112 - LEADING ORGANIZATIONS TO INNOVATE SMARTER
BSPP 2328 - THE BUSINESS OF HUMANITY - STRATEGIC MANAGEMENT
BSPP 2409 - STRATEGIC MANAGEMENT

Area of Strategic Management

Strategic Management

Students in the Strategy discipline study the problems and issues facing general managers who must formulate and implement strategies for organizations in uncertain and ambiguous environments. Seminars cover theory and empirical findings related to strategy formulation and implementation, and are intended to familiarize students with the variety of research perspectives relevant to the strategy field. In addition, each
faculty member leading a course will ask participants to build upon extant research to develop their own research topics as a first step toward publishing articles.

Strategy students must complete a total of 15 seminars/courses (17 courses if they do not exempt the MBA course requirement). This includes eight courses in their major area of study within Strategy, at least four courses in research methodology, and at least three courses in a minor area of study. Students may instead choose to complete eight courses in their major area and seven total courses in research methodology for a research methodology minor. Students should choose individually approved seminars and courses from the enclosed list of Katz seminars and courses, as well as from approved University of Pittsburgh seminars and courses. Finally, on a limited basis students may also cross-register into approved seminars and courses at other institutions to support their overall program of study. Each program of study must be approved by the student's faculty advisor and the Director of the Katz Doctoral Program. Any subsequent seminar/course changes must also be approved.

Strategy doctoral students are provided with up to five years (14 terms) of financial support in the form of Graduate Student Assistantship, Teaching Assistant or Teaching Fellow. Typically students provide research assistance to their faculty mentors for approximately four years and provide teaching and teaching assistance for up to one year.

Curriculum

The following Strategy seminars are offered by the Katz Doctoral Program (subject to student enrollment):

- BSPP 3010 - INDEP STUDY STRATEGIC PLANNING POLICY
- BSPP 3011 - STRATEGIC PLANNING SYSTEMS
- BSPP 3012 - RESEARCH IN COMPETITIVE STRATEGY
- BSPP 3013 - FOUNDATIONS OF STRATEGY RESEARCH
- BSPP 3014 - RESEARCH IN CORPORATE STRATEGY
- BSPP 3015 - WORKSHOP IN STRATEGIC PLANNING POLICY
- BSPP 3018 - THEORY BUILDING IN MANAGEMENT
- BSPP 3019 - SEMINAR IN ENTREPRENEURSHIP
- BSPP 3099 - READINGS STRATEGIC PLANNING & POLICY
- BUSADM 3199 - RESEARCH AND DISSERTATION PHD
- FTDF 0000 - FULL-TIME DISSERTATION STUDY

Katz Graduate School of Business Faculty

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<tr>
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School of Computing and Information

The University of Pittsburgh's School of Computing and Information (SCI) opened on July 1, 2017, building upon the traditions of excellence embodied by the Department of Computer Science and School of Information Sciences. SCI aims to position the University as a leader in preparing students for this increasingly-interconnected world by providing students with excellent disciplinary foundations and training to support our mission to make the world a better place through polymathic education and the science of interacting systems. Our degree programs address the holistic spectrum of computing and information, from producers to users and from science-oriented exploration to human-centric applications. We foresee a future with increased opportunities to expose our students to a multidisciplinary approach to knowledge creation, information management, and computing; expanded experiential learning opportunities; and extended career networks.

SCI represents the confluence of computing and information along with diverse academic disciplines, serving as a valuable resource to researchers, students, and organizations across the University and around the world. SCI is a new school for a new era of research and learning, one in which the power of information and computing will accelerate knowledge discovery and creativity.

The regulations set forth in the following document apply to students who were admitted to the School of Computing and Information during the 2018-2019 Academic Year. Students admitted prior to this academic year should refer to the Archived Catalogs for the regulations governing their graduate studies.

Students admitted PRIOR to the 2017-2018 Academic Year will find the School-level rules to which they are bound by going to the Archived Catalogs for either Arts & Sciences (Computer Science or Intelligent Systems degrees) or School of Information Sciences (Information Science, Library & Information Science, and Telecommunications degrees).

Contact Information

University of Pittsburgh
School of Computing and Information
Office of Student Services
135 North Bellefield Avenue
Pittsburgh, PA 15260
412-624-5230
www.sci.pitt.edu
SCIadmit@pitt.edu (prospective students)
SCIreg@pitt.edu (current students)

School of Computing and Information Program and Course Offerings

Computational Modeling and Simulation, PhD

For more information regarding the PhD in Computational Modeling and Simulation degree program, visit the Dietrich School of Arts & Sciences Catalog.

Computational Modeling and Simulation, MS

For more information regarding the Master of Science in Computational Modeling and Simulation degree program, visit the Dietrich School of Arts & Sciences Catalog.

Department of Computer Science
The faculty of the Department of Computer Science are committed to high quality graduate education. The broad scope of their research enables them to convey to graduate students a comprehensive, state-of-the-art understanding of computer science and its application to a wide range of other disciplines. A substantial level of sponsored research has been achieved thereby providing financial support for many graduate students in the form of research assistantships.

Our graduate students come from all corners of the globe and are able to pursue research topics in most areas within computer science and in many application areas within other disciplines. They are able to take advantage of the diverse faculty research collaborations with other departments and programs within the University such as the Learning Research and Development Center, the Intelligent Systems Program, the Telecommunications Program of the School of Information Sciences, the School of Engineering, and the School of Medicine.

Policies for the Department of Computer Science

Advisors and Student Evaluations

When a student enters the Department he or she will be assigned a temporary advisor. The temporary advisor will guide the student in making course selections and will provide advice and information about the student's academic program. The advisor will sign the student's registration form each term, except when the student is on probation. During a probationary period, the student must have the registration form signed by the Graduate Enrollment Officer. A student may change advisors at any time, after obtaining the agreement of the new advisor. The advisor presents information about his or her students at the annual student performance evaluation meeting.

When a student begins to do independent work on either a MS or PhD project, he or she will negotiate with a faculty member to supervise this work and to become the student's principal advisor. The principal advisor replaces the temporary advisor, and assumes the responsibility for guiding the student in his or her academic program, for signing his or her registration form, and for presenting information about him or her at the annual student performance evaluation meeting. The principal advisor also guides the student in selecting an appropriate research problem for a MS project, MS thesis, or PhD dissertation, and oversees the work.

All students should meet with their advisor at least once per term. Students engaged in research will normally meet with their advisor weekly.

Throughout the term, students may generate an Academic Advisement Report (AAR). This report tracks degree completion, pulling course information directly from their academic record. Substitutions and exceptions must have approval of the GPEC and must be documented through the Records Office. Information regarding documenting exceptions is available on the School's Current Students webpage.

Details regarding advising and resources for tracking your degree progress (the AAR) are available on the School's Catalog page, under the Advising section.

Each student must ensure that the AAR meets all of the program requirements for graduation. At the completion of the program, the Records Office coordinates with the Department to certify all students for graduation. See the SCI Catalog page for more details and regulations pertaining to graduation.

Stricter advising guidelines and regulations apply to the doctoral students. See the doctoral program regulations for details.

Annual Student Performance Evaluation Meeting

Once a year, the CSD faculty will hold a meeting to evaluate student progress. In that meeting, information about each student's academic progress during the previous 12-month period is presented by his or her advisor. It is the student's responsibility to provide the advisor with any supporting material that the advisor requests for the evaluation meeting. After the meeting, students will receive a letter from the GPEC chair describing the faculty's assessment. Students who are not making satisfactory progress in the program will be sent a warning letter stating specific performance goals. Failure to meet those goals may result in termination from the program.

Responsibilities

The following parties share responsibilities for a student's academic progress:
The student is expected to:

- be knowledgeable of SCI and departmental regulations;
- fill in the yearly evaluation form to keep his or her advisor current about his/her academic status (i.e., provisional or probation), progress, and plans;
- register for courses on time (preferably as early as possible);
- assist the administrator in CSD Graduate Programs Office in keeping current his or her file, including an up-to-date mailing address;
- notify the administrator in the CSD Graduate Programs Office if he or she changes advisor;
- provide advisor with materials for the student annual evaluation meeting;
- (for doctoral students) file an application for candidacy for the PhD degree, after passing the dissertation proposal examination and at least eight months before the defense of the dissertation;
- follow the published instructions on SCI procedures for graduation, including filing an official application for graduation early in the term in which graduation is expected; and
- deliver two copies of a final MS thesis or PhD dissertation to the CS Library (please refer to the templates online at http://training.cssd.pitt.edu/thesisdissertationtemplates.htm).

The advisor is expected to:

- assist the student in selecting courses and sign his or her registration form (except in the case of students who are on probation, whose forms must be signed by the Graduate Enrollment Officer);
- counsel the student and verify that his or her planned program is appropriate, given the student's academic goals and the CSD regulations;
- assess the student's progress towards a degree and provide him or her with advice;
- present information about the student's progress at the annual student performance evaluation meeting;
- assist the student in selecting a research area and a principal advisor;
- validate the appropriateness of the student's research problem for a MS project or thesis or PhD Dissertation;
- assist the student in forming thesis, comprehensive examination, proposal and/or dissertation committees, as appropriate; and
- oversee the student's oral examination for an MS thesis, doctoral comprehensive examination, doctoral dissertation proposal meeting, and doctoral dissertation defense examination. In all cases, after the examination has been completed the advisor will secure the signatures of all committee members, complete the required forms, give them to the administrator in the CSD Graduate Programs office, and communicate the results to the student.

The Chairperson of GPEC is expected to:

- act on petitions for transfer of credit, substitution of course requirements, and similar matters;
- announce the timing of PhD preliminary examinations to all graduate students and faculty;
- oversee the preparation, grading and review of these examinations; and
- report the results of the examinations to the student, the student's advisor, the administrator in CSD Graduate Programs Office, and the Dean.

**Registration Requirements and Statute of Limitations**

The CSD abides by the SCI registration requirements and regulations pertaining to statute of limitations. See the SCI Credit & Enrollment Policies for details regarding these items.

Under exceptional circumstances a candidate for an advanced degree may apply for an extension of the statute of limitations. Students seeking support in extending their statute of limitations, should provide the CSD with the reason for the delay, evidence of continuing progress toward the completion of the degree and a plan and proposed date for the completion of the degree. The request must be made in writing, approved by the student's advisor, GPEC, and the Department Chairperson. The Department will submit recommended extensions to the Dean for final action. Each student who requests an extension of the statute of limitations must be prepared to demonstrate proper preparation for the completion of all current degree requirements.

Under special circumstances, a graduate student may be granted one leave of absence. Consistent with regulations, a maximum leave of two years may be granted to doctoral students or one year to master's students. An application for a leave of absence must state the reason for the request, and must be approved by the student's advisor, GPEC, and the Department Chairperson, and then submitted to the Dean for final action. If approved, the time of the leave shall not count against the total time allowed for the degree(s) being sought by the student.
**Grading Options**

All formal course requirements in the CSD must be completed with letter grades. Directed and independent study, and thesis and dissertation research must be taken with the S/N grading option. This includes CS2000, CS2003, CS2910, CS2990, CS3000, and CS3900.

**Independent Study and Directed Study**

Students may elect to undertake individual study under the supervision of a faculty member. A student who wishes to register for CS2000 (Master's Thesis), CS2910 (Master's Project), CS2990 (Independent Study), CS3000 (PhD Dissertation Research), or CS3900 (PhD Directed Study) must submit an individual study permit request for approval by the supervising faculty member. The approved title and short description for these courses must be submitted to the CSD Graduate Programs Office before the student is allowed to register in these courses.

**Transferring Credit**

Normally, students will fulfill CSD course requirements by taking graduate-level courses within the CSD, while they are enrolled in the department. However, in some cases, it may be desirable for a student to count coursework done outside the CSD and/or prior to the time the student enrolls in the department. In such cases, written approval of GPEC is required.

Students can petition GPEC to use courses taken outside the Department in two different ways. First, students may apply to transfer the credits for these courses, using the credits towards the total number needed for a degree. Second, students may apply to use these courses to place out of requirements, i.e., to substitute a course taken elsewhere for a course required by the CSD.

Note that these actions neither entail one another nor are mutually exclusive. For example, a student might enter the CSD having previously taken a graduate-level course in Operating Systems. In that case, he or she might petition both to receive both 3 transfer credits and to place out of the requirement to take CS2510.

In another case, a student might have taken a course that is relevant to graduate studies in computer science, but does not directly correspond to any course required by the CSD, for example, a course in Neural Networks. In that case, the student might petition only for a transfer of 3 credits.

Finally, in yet another case, suppose that a MS student enters having previously taken graduate-level courses in Compiler Design and in Principles of Database Systems. Since only one out-of-department course can be counted for the MS degree, the student may request the transfer of 3 credits for only one of the two courses (say, CS2210), thereby placing out of the requirement. The student may then request placement out of the requirement for the second course (in this example, CS2550), though the credits for this course will not transfer.

Petitions to count courses taken outside of the CSD must be submitted according to the following schedule:

1. A petition to count a course to be taken outside the CSD during a given term must be submitted no later than 2 weeks after the start of the registration period for that term.

2. A petition to count course(s) taken prior to enrolling in the CSD must be submitted within the first two terms after entering the program, and normally within the student's first term. A student must submit all petitions to transfer or substitute courses taken prior to enrollment at the same time. Petitions should be submitted during the first three weeks of any given term and GPEC will meet shortly thereafter to look into these petitions.

3. Normally, an incoming student will not enroll for credit in courses outside the CSD during his or her first term in the program. In unusual cases, an incoming student may petition GPEC during the first week of classes to count such a course.

The University's Academic Regulations for transfer credits apply to courses taken outside the CSD. The following restrictions also apply to CSD students:

- For the MS degree, no more than one course (3 credits) that is either taken out-of-department or is 1600-level can be counted. This does not include the required course in theory or algorithms (CS1510 or CS1511). In no case will a 1000-level course taken prior to enrollment in the CSD count towards the MS degree (including CS1510/CS1511).

- For the PhD degree, no more than 24 credits taken at the MS level may be transferred from out of the department. In addition, for courses taken beyond the MS level, 12 more transfer credits may be acceptable. Note however, that at most 4 of the 12 required courses for the PhD may be taken outside the department. Thus, additional transfer credits (beyond 12 used to satisfy required courses) may be used towards the 72-credit requirement, but students must still complete 8 courses in the CSD.

- After enrolling in the program, students will not normally be given approval to take a course outside the CSD in place of a required CSD course, if the student could take the required CSD course within the next academic year.
Petitions to transfer credit and/or place out of requirements must be submitted to GPEC. For each course the student must submit the following:

- A transfer/course substitution form, available from the administrator in the CSD Graduate Programs Office, signed by the student's advisor. If the petition includes a request to place out of a requirement, the form should also be signed by a CSD faculty member who teaches the equivalent course. Students may contact the GPEC chair if they need assistance in locating the appropriate faculty member(s).

If GPEC recommends approval, it will send the recommendation to the Dean, who will make a final decision and notify the student.

The Deans Office then shares the approval with the Records Office for processing. Forms and School-level regulations regarding transfer credit are linked and explained on the SCI Catalog page. All materials noted on the SCI Transfer Credit Request Form must be submitted with a student's petition to transfer credit.

GPEC will make the final decision about requests to place out of requirements, and will notify the student directly.

**Awarding of Teaching Assistantships**

The CSD supports a number of students with Teaching Assistantships and Fellowships (TAs/TFs). In awarding these, the Department gives priority to PhD students. The following policies apply to the awarding of TAs and TFs; note that these policies are subject to the Department having adequate funds, as discussed below.

1. Students may be admitted with or without support. Those offered support will be offered full support, except under extenuating circumstances. Students may be offered partial support during the summer.

2. All PhD students admitted with support typically continue with the same level of support for the first two years, provided that he/she meets the eligibility requirements for a TA.

3. The eligibility requirements for a TA are:
   - they are not placed on probation
   - they score at least a 4 in the English Language Fluency Test
   - they perform their TA/TF duties satisfactorily
   - they complete their preliminary examinations by the end of the third regular term of enrollment.
   - they have been in the program no more than 5 years.
   - they have maintained an S in the CS2003 course.

   PhD students in their 3rd year or beyond are also typically given support. However, responsibility for providing the financial support typically moves from the department to the student's advisor. Please contact your advisor (by March 1) for details.

4. All other students will be considered for support on a case-by-case basis. Criteria used in giving support to these students will include:
   - the number of course requirements already completed
   - scholarly performance, including GPA and evidence of research potential
   - the results of attempts to pass the preliminary examination
   - the score in the English Language Fluency Test, and
   - the quality of previous teaching performance (if applicable)

Note that it is often the case that some TA positions become available only on very short notice before the start of a term. In order to satisfy the Department's teaching needs, these positions may be filled on an "emergency" basis, following these criteria as preferences. Students receiving these emergency appointments should be aware that their appointment does not imply any preferential treatment for appointments in subsequent terms.

In order to be considered for financial aid for the Fall term, a student has to file an application in the CSD Graduate Programs Office by March 1st. Copies of a vita, an up-to-date grade report and teaching evaluations (when applicable) must be enclosed with the application. Awards for the Fall term will normally be for a full academic year (i.e., Fall and Spring terms), except in the case of emergency positions as noted above. Applications for the Spring and Summer terms are due Nov. 1 and Mar. 1, respectively.

A student who has signed a TA contract may resign from all or part of the assignment for a given term any time up to four weeks before the start of that term. If a student does not resign from the TA assignment, he or she is bound by that assignment. Students violating this rule will not be eligible for TA positions in any subsequent term.

**Fellowships and Awards**

Each year, there are several opportunities for graduate fellowships and awards. It is the student's responsibility to watch for these opportunities, to determine eligibility and to complete an application.
For some external fellowships and awards, the CSD may nominate a maximum number of students. For example, the Andrew Mellon Predoctoral Fellowship restricts the number of students that a department may nominate. When a fellowship or award limits the number of nominations, the CSD will follow a four-step procedure to select the actual nominations. Note that a nomination by the department does not necessarily imply the awarding of a fellowship.

1. Determine eligibility: A student is eligible for a fellowship if he/she meets the criteria established by the organization that grants the fellowship. In addition, a student must be in a good academic standing and meet certain criteria that are determined by the department. The specific department criteria will be announced each year prior to the fellowship deadline.

2. Seek advisor endorsement: An eligible student must discuss the fellowship with her/his advisor and get the agreement of the advisor to write a letter of recommendation.

3. Apply: If a student is eligible and has an advisor's endorsement, then a fellowship application should be completed and submitted to the Computer Science Department.

4. Selection of final nominees: The applications will be made available to the whole CSD faculty, who will vote on the final set of nominees. The faculty will vote based on the application materials and additional information about students' departmental activities that include attendance of departmental colloquia, and participation in the departmental research competitions. A student should write the application in a way that is clear to a non-specialist. The final set of nominees may submit their applications to the fellowship organization.

As an example of department criteria for fellowship eligibility, the following criteria was established for the 2006-2007 Andrew Mellon Fellowship:

1. Passed preliminary examination
2. An author on at least two papers
3. Primary author on at least one paper
4. 3.60 GPA or better

Grievance Procedures

Students who believe that a decision about their academic program has been made on the basis of incomplete or incorrect information may appeal the decision. To do this, the student should prepare a letter that outlines his or her position and provide evidence that supports the claim that the decision was appropriate. The student should send the letter to the CSD Chairperson, after securing the endorsement of his or her advisor. The CSD Chairperson may either reject the appeal or forward it to the Dean for consideration. Appeals must be made within thirty days of the date of notification of any decision.

Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CSD</td>
<td>Computer Science Department</td>
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<tr>
<td>SCI</td>
<td>School of Computing and Information</td>
</tr>
<tr>
<td>GAFA</td>
<td>Graduate Admissions and Financial Aid Committee</td>
</tr>
<tr>
<td>GPEC</td>
<td>Graduate Programs and Examinations Committee</td>
</tr>
<tr>
<td>GPA</td>
<td>Quality Point Average</td>
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</tbody>
</table>

Computer Science, PhD

Admissions Requirements

Note that an MS degree is not required to apply to the PhD program. Students admitted to the MS program are eligible to complete the requirements for that degree. If they wish to transfer to the PhD program, they must apply to the admissions committee, which will make its decision based on the student's performance in the MS program and on faculty recommendations.
The department is open to applications from exceptional students transitioning to graduate study in Computer Science from other undergraduate fields. Transitional students with demonstrated computing aptitude, as evidenced by outstanding grades in at least 4 of the required computer science courses noted below, may be considered for admission to the graduate program. Completed minimally a selection of courses in the following topical areas (the corresponding Pitt course numbers are indicated):

In Computer Science, one course in each of:

- CS 0401 - INTERMEDIATE PROGRAMMING USING JAVA
- CS 0441 - DISCRETE STRUCTURES FOR CS
- CS 0445 - DATA STRUCTURES
- CS 0447 - COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE
- CS 1510 - ALGORITHM DESIGN or CS 1511 - INTRODUCTION TO THEORY OF COMPUTATION
- CS 1520 - PROGRAMMING LANGUAGE FOR WEB APPLICATIONS or CS 1621 - STRUCTURE PROGRAMMING LANGUAGES
- CS 1550 - INTRODUCTION TO OPERATING SYSTEMS or CS 1651 - ADVANCED SYSTEMS SOFTWARE

In Mathematics, the following:

- The two-course calculus sequence (MATH 0220, MATH 0230)
- A course in linear algebra (MATH 1180 or MATH 0280)
- A course in probability and statistics, requiring calculus as prerequisite (STAT 1151, STAT 1152)

**Degree Requirements for the PhD**

A student interested in earning the PhD must be admitted into that program. Master's students interested in the PhD program are encouraged to take the preliminary exams.

**Residency Requirement**

All students seeking the PhD degree in the CSD must engage in a minimum of one term of full time graduate study by the end of the term in which the comprehensive examination is taken.

**PHD Course Requirements**

The PhD degree requires 72 credits of formal course work, independent study, directed study, and/or dissertation research.

The following 12 courses must be completed with an overall grade point average of 3.00 or better:

**Course Requirements**

CS 2001, Research Topics in Computer Science, and CS 2002, Research Experiences in Computer Science. Students are required to take CS 2001 during their first fall term and CS 2002 the following spring.

At least one course from each of the following foundation areas.

**Architecture and Compilers**

- CS 2410 - COMPUTER ARCHITECTURE or
- CS 2210 - COMPILER DESIGN

**Operating Systems and Networks**

- CS 2510 - COMPUTER OPERATING SYSTEMS or
- CS 2520 - WIDE AREA NETWORKS
  Artificial Intelligence and Database Systems

- CS 2710 - FOUNDATIONS OF ARTIFICIAL INTELLIGENCE or
- CS 2550 - PRINCIPLES OF DATABASE SYSTEMS

Theory and Algorithms

- CS 2110 - THEORY OF COMPUTATION or
- CS 2150 - DESIGN & ANALYSIS OF ALGORITHMS

An additional 6 graduate-level CSD courses (for a total of 12 courses). These courses must be 2100-level or higher CSD courses and cannot be independent study courses (CS2990, CS3000), graduate internship (CS2900), thesis project or research courses (CS2910, CS3900).

At least 2 courses must be at the 3000-level.

The following requirements apply to the 12 required courses:

- All must be taken for a letter grade.
- Students are required to complete the four required foundation area courses by the end of the fourth regular term of study. Regular terms include the fall and spring and do not include the summer session.
- The student must receive a grade of B or better in each of the required foundation area courses, and a grade of B- or better in each of the six additional courses; in addition, he or she must maintain an overall average QPA of 3.0 or better.
- No more than 6 of the 12 courses may be taken outside of the CSD. This includes courses that are transferred from other universities. All courses from outside the CSD must be approved by GPEC; see Section 5.6 for details.
- All courses must be at the 2000- or 3000-level and at least 2 courses must be at the 3000-level. Courses in the range 20xx (e.g., CS2045) do not count toward the 12 course requirement.
- All 12 courses must be successfully completed before admission to candidacy for the PhD (This normally occurs when the student passes the oral examination during the dissertation proposal.)

CS 2003 Requirements

After completing CS 2001 and CS 2002, students must enroll in CS 2003 until receiving a satisfactory grade of S for 4 regular terms.

In order to receive a satisfactory grade of S, students must:

- Attend at least seventy percent (70%) of Departmental Research Colloquia offered at the regularly scheduled course time over the course of the term. If there are an unexpectedly high number of Colloquia in a term (approximately more than one per week), attending only 10 Colloquia is required.
- GSO-sponsored colloquia occurring within the regularly scheduled course time shall be included in the count of colloquia offered for this requirement.
- Perform at least one (1) approved Research Activity during a regular term (fall or spring) of each academic year.
  - Options include: Presenting a GSO-sponsored colloquium for CS 2003, presenting a poster at the alumni research reception (fall) or CS Day poster competition (spring), or participating in the CS Department research competition. Other related activities may be presented to GPEC in petition for approval.

This annual requirement shall be evaluated only in the spring term and shall consider the academic year beginning with the prior fall term. As such, students may receive an S in the fall term having only fulfilled requirement (a), with the expectation that requirement (b) will be fulfilled in the spring.

Timetable

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Limits</th>
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<tbody>
<tr>
<td>Preliminary Exam</td>
<td>Must be passed within 2 regular terms after full status admission.</td>
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<tr>
<td>Foundation Area Courses</td>
<td>Must be passed within 4 regular terms after admission.</td>
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<td>-------------------------</td>
<td>------------------------------------------------------</td>
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<tr>
<td>Comprehensive Exam</td>
<td>Must be passed within 4 calendar years of admission.</td>
</tr>
<tr>
<td>Oral Proposal</td>
<td>Must be passed within 5 years after full status admission.</td>
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<tr>
<td>Defense and Dissertation</td>
<td>Submit an approved dissertation a minimum of 8 months after passing the proposal.</td>
</tr>
<tr>
<td>Statute of Limitations</td>
<td>PhD degree must be completed within a period of ten calendar years from the student's initial registration for graduate study (or within eight calendar years for students who enter with a master's degree). These limits apply to all students, whether full-time or part-time.</td>
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</table>

Please note that each of the above milestones must be satisfied by the indicated deadline as part of maintaining good academic standing in the department.

**PHD Preliminary Examinations**

During the first two regular terms of study, each student must pass:

- At least 2 courses at the 2100 - 2899 level with a grade of A- or higher
- At least 2 courses at the 2100 - 2899 level with a grade of B or higher

At least one of the courses taken for an A- must be a required foundation area course. Students are not permitted to repeat a class that they have passed (i.e., earned B or better) in order to improve the grade (i.e., to A or A-). Regular terms include the fall and spring and do not include the summer term.

**PHD Comprehensive Examination**

The purpose of the comprehensive exam is to test the depth of knowledge of the student in one or more areas that are related to the student's area of research and that are approved by the comprehensive examination committee.

To pass the comprehensive exam a student must demonstrate sufficient expertise and depth of knowledge in a selected area of foundation to conduct research leading to a dissertation in that area. The comprehensive exam is an oral exam and is administered by at least three (3) CSD faculty that compose the PhD dissertation proposal committee. The committee has to be approved by the department chair at least four (4) weeks before the scheduled exam date.

The student will prepare a 30 minute presentation which will be followed by an oral question and answer session. The exam is based on a reading list. The student should agree on a reading list with each member of the comprehensive exam committee at least two weeks prior to the exam. The length of the exam is at least two hours and the focus and goal of the presentation and the question and answer session will be specified by the committee at least two weeks before the exam.

Normally, the comprehensive exam should be completed within 1.5 years of completing the preliminary exams.

**Dissertation Proposal**

All PhD students must conduct original research leading to a dissertation. This research must be conducted under the direction of a faculty advisor and begins with the preparation of a dissertation proposal. A written dissertation proposal of approximately 30-40 pages and a presentation of the dissertation proposal are made to a committee of graduate faculty. This committee will examine the dissertation topic and research methods. The committee has to be approved by the department chair at least two (2) weeks before distributing the proposal or the dissertation to the committee.
The intent of requiring a dissertation proposal and an examination on it is to provide opportunities for substantive feedback from a student's committee on the dissertation topic and methods of research. The proposal and examination can aid the student in identifying especially promising research issues and in avoiding work that the committee deems to be unnecessary or inappropriate.

After obtaining approval of the dissertation proposal from the faculty committee, a student gains the official status of a PhD candidate. At this time the proposed research is conducted under the direction of the faculty advisor. Yearly meetings with the student's dissertation committee are required. Upon completion of the research, and subject to agreement from the faculty advisor and committee, the candidate schedules an open meeting at which the dissertation is presented and defended.

**Doctoral Committee**

Each student intending to complete a PhD degree should work carefully with his or her advisor to select a doctoral committee. The committee is composed of:

The student's advisor, who must be a full time (primary appointment) CSD faculty member and a member of the SCI graduate faculty. A student may also have a co-advisor, but the co-advisor must have a primary or secondary (including adjunct) appointment in the CSD. A co-advisor must also be a member of the SCI graduate faculty.

At least two other faculty members with a primary appointment in the CSD, one of whom must be tenured in the CSD.

At least one faculty member from another department within the University that would serve as an external member. The external member(s) should also be a member of the graduate faculty. With the approval of the Dean, the external member of the committee may come from outside the University. The external member cannot serve as a co-advisor.

A majority of the committee members, including the advisor, must be members of the SCI graduate faculty. Regulations require that the doctoral candidate and his or her committee meet at least once per year to evaluate the candidate's progress. The membership of the committee may be changed whenever it is appropriate or necessary, subject to the approval of the CSD chair and the Dean. The committee, or any change to its member, has to be approved by the department chair at least four (4) weeks before distributing the proposal or the dissertation to the committee. Note that the doctoral committee need not be identical to the comprehensive examination committee, although usually there will be significant overlap between the two.

**Written Proposal**

A written proposal must be distributed to the examining committee at least two weeks in advance of the oral examination on the proposal.

There is no specific requirement on the length of the written proposal. However, each member of the Doctoral Committee may request that the student provides him/her with a short document (about 30-40 double-spaced pages) that summarizes the proposed research. This document normally contains:

- a clear statement of the problem to be solved,
- proposed methods of solution,
- scholarly review of related work,
- preliminary results obtained from a prototype program and/or a partial analysis, and
- a detailed research plan, stating the issues remaining to be addressed and suggestions for how they will be addressed, within a specified time frame.

Additional documents (including papers or technical reports) may be provided as appendices.

**Oral Examination on the Proposal**

After writing the proposal and conferring with his or her advisor, the student must schedule an oral examination and send an announcement of the examination to all faculty and graduate students at least one week in advance of it.

The oral examination (sometimes called the prospectus meeting) consists of two parts:
• a public presentation of the proposal open to all members of the University community, followed by questions from the general audience; this component is normally 40-50 minutes in length, and

• a private examination by the doctoral committee.

Any CSD faculty member may attend the private examination, but only the examining committee will vote on results. The doctoral committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree.

The oral examination must be announced to the CSD community via the faculty and graduate student mailing lists. This announcement must be at least one week prior to the examination. The announcement should include a title, abstract, advisor(s) name(s), committee member names, date of examination and location of examination. The abstract is due to the graduate administrator at least four (4) weeks before the scheduled proposal date.

It is the student's responsibility to schedule meetings with members of the examining committee within a few weeks after the examination to review criticisms and suggestions.

After passing the oral examination on the proposal, a student gains the official status of a PhD candidate.

**Dissertation Research and Defense**

The student must meet with his or her entire dissertation committee at least once per year during the time in which the research is being done. The student will also be meeting regularly with his or her advisor.

Upon completion of the research, the student prepares a written dissertation, and, in consultation with his or her advisor and dissertation committee, schedules a public oral defense.

The oral defense must take place at least 8 months after the admission to candidacy. The normal format for the defense of dissertation is a public oral presentation of the research followed by questions by the dissertation committee and general audience. Only the dissertation committee will vote on the result. If the outcome is not unanimous, the case is referred to the Dean for resolution.

The oral defense is public and open to all members of the University community. It must be publicly announced to the school and CSD (via the faculty and graduate mailing lists) at least two weeks prior to the scheduled defense date. The announcement should include a thesis title, abstract, advisor(s) name(s), committee member names, date of defense and location of defense. The abstract is due to the graduate administrator at least four (4) weeks before the scheduled defense date.

It is the responsibility of the student's advisor to ensure that the dissertation is in final form before requesting signatures of all committee members. After the final oral examination is successfully completed, the student must submit his or hers theses or dissertation electronically. Check the website to see what you will need to submit for the Electronic Thesis and Dissertation (ETD).

**Research, Internship Training Requirement**

**Research Training**

Because the PhD degree is a research degree, students should expect to participate in research projects as a way of learning the art of doing research. Normally, a student will start by working with a faculty member on a pre-defined research problem, and later will define his or her own research problem as the subject of the dissertation.

There is no departmental requirement that students participate in the preparation of research grant proposals. However, it is desirable that all doctoral students have some exposure to the process of preparing and submitting research grant proposals. Normally this will be part of the mentoring by each student's advisor.

**Internships**

When an international student does an internship, he or she must use Curricular Practical Training (CPT). If a student on an F-1 visa has engaged in 12 months or more of full-time Curricular Practical Training, he/she will be ineligible for Optional Practical Training (OPT).
Computer Science, MS

Admissions Requirements

The department is open to applications from exceptional students transitioning to graduate study in Computer Science from other undergraduate fields. Transitional students with demonstrated computing aptitude, as evidenced by outstanding grades in at least 4 of the required computer science courses noted below, may be considered for admission to the graduate program. Completed minimally a selection of courses in the following topical areas (the corresponding Pitt course numbers are indicated):

In Computer Science, one course in each of:

- CS 0401 - INTERMEDIATE PROGRAMMING USING JAVA
- CS 0441 - DISCRETE STRUCTURES FOR CS
- CS 0445 - DATA STRUCTURES
- CS 0447 - COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE
- CS 1510 - ALGORITHM DESIGN or CS 1511 - INTRODUCTION TO THEORY OF COMPUTATION
- CS 1520 - PROGRAMMING LANGUAGE FOR WEB APPLICATIONS or CS 1621 - STRUCTURE PROGRAMMING LANGUAGES
- CS 1550 - INTRODUCTION TO OPERATING SYSTEMS or CS 1651 - ADVANCED SYSTEMS SOFTWARE

In Mathematics, the following:

- The two-course calculus sequence (MATH 0220, MATH 0230)
- A course in linear algebra (MATH 1180 or MATH 0280)
- A course in probability and statistics, requiring calculus as prerequisite (STAT 1151, STAT 1152)

At the time of enrollment, the student must hold a BS degree.

Degree Requirements for the MS

MS Course Requirements

The MS degree requires 30 credits of formal course work. The 30 credits include a total of 24 credits plus an MS thesis, CS 2000; or 27 credits plus an MS project, CS 2910.

The 30 credits must include one course from each of the following foundation areas.

Foundation area courses must be completed with a grade of "B" or better.

Theory and Algorithms

- CS 2150 - DESIGN & ANALYSIS OF ALGORITHMS or
- CS 2110 - THEORY OF COMPUTATION or
- CS 1510 - ALGORITHM DESIGN or
- CS 1511 - INTRODUCTION TO THEORY OF COMPUTATION

Architecture and Compilers

- CS 2410 - COMPUTER ARCHITECTURE or
- CS 2210 - COMPILER DESIGN

Operating Systems and Networks

- CS 2510 - COMPUTER OPERATING SYSTEMS or
- CS 2520 - WIDE AREA NETWORKS
Artificial Intelligence and Database Systems

- CS 2710 - FOUNDTNS OF ARTIFICIAL INTELLGNC or
- CS 2550 - PRINCIPLES OF DATABASE SYSTEMS

In addition to the course courses, list the two options:

- Thesis Option: 6 credits for the MS thesis + at least 12 additional credits of graduate (2100-level or higher) CSD courses.
- Project Option: 3 credits for the MS project + at least 15 additional credits of graduate (2100-level or higher) CSD courses.

All additional coursework must be completed with B- or better.

The additional credits cannot include independent or directed study courses (CS 2990, CS 3000), MS thesis or project, or research courses (CS 2910, CS 3900, ...).

To fulfil the additional credits, a student may count either (a) one CS1600-level or CS20xx course (excluding 2000-2009) or (b) petition GPEC to count one out-of-department course.

All coursework must be completed with an overall grade point average of 3.0 (B) or higher.

Timetable

MS degrees must be completed within four calendar years from the student's initial registration for graduate studies. This limit applies to all students, whether full-time or part-time. Normally, full-time students will complete the degree within two years.

Copies of the thesis must be submitted to the committee at least two weeks in advance of the examination.

The project report must be submitted to the advisor at least a week in advance of the end of the term.

MS Project or Thesis

There are two options for completing the MS degree: the thesis option and the project option.

For the thesis option, the student must complete a written thesis, taking at least six credits of CS 2000, which must be taken with the S/N grading option. The student's advisor will assist him or her in selecting a thesis committee, to consist of at least three faculty members, at least two members must be from Computer Science (one being your advisor) and at most one from outside the department or University (all three could be from Computer Science). The committee will conduct a public oral final examination. The committee must be formed with all names sent to the graduate administrator at least four weeks before the examination date.

The committee will vote on the outcome and sign a report that will be filed in the SCI Graduate Students Office. The oral examination is public and open to all members of the Computer Science Department. It must be announced to CSD via the faculty and graduate mailing lists at least one week prior to its scheduled date. The announcement must include a title, an abstract, name of advisor(s), name of committee members, date of examination, and location of examination.

For the project option, the student must complete a Master's project, taking at least three credits of CS 2910, with the S/N grading option. Approval of a project report by the advisor is required.

Both CS 2000 and CS 2910 are closed courses, requiring approval of the faculty advisor for enrollment.

Note that students selecting the thesis option must complete a total of four electives, plus foundation courses and thesis research (CS 2000), while students completing the project option must complete a total of five electives, plus foundation courses and directed research (CS 2910).

MS Internship

A maximum of one credit of MS Internship (CS 2900) can be taken by students wishing to supplement their in-class education with practical training. Note that international students must complete two semesters of full-time study prior to qualifying for CPT. Further, OIS is unlikely to
approve CPT authorization during the final semester of study; please talk to the graduate studies administrator or the DGS for more information regarding these issues.

Students wishing to complete an MS Internship (CS 2900) as part of their MS degree must fill out a learning agreement in conjunction with their employer and their faculty advisor in the CS Department. Please note that MS Internships not contributing substantively to a student's graduate education will not be approved by the Department. Completed Learning Agreement forms (with all signatures) should be turned in to the graduate studies administrator prior to the add/drop deadline for the term in which the Internship will take place.

**Department of Informatics and Networked Systems**

Those with the skills to design, build, manage, and protect the systems and networks that make information useful and accessible are indispensable. Information professionals enjoy limitless potential for exciting careers in virtually every industry — health care, law, finance, manufacturing government, higher education, and more.

We offer undergraduate and graduate degree programs that balance theoretical principles with hands-on learning experiences in all aspects of information systems, from storing and retrieving information to communicating information among systems, as well as the interaction between people and information systems as well as the role of information systems and technologies in both business and society.

Here, you will have amazing opportunities to learn from faculty engaged in cutting-edge research funded by the National Science Foundation, Air Force Office of Scientific Research, National Institutes of Health, and more. Pitt is one of the top 25 public research universities; this provides our students with access to research projects and laboratories that will develop the next generation of information technologies. We believe that research and teaching must be closely linked, so that future researchers and teachers will gain critical experience in development and research techniques. Students in both the undergraduate and graduate programs are encouraged to participate in research opportunities. Moreover, since the University is situated within a major urban area, our students have a vast array of internship and employment opportunities with major US corporations.

Our students acquire more than technical expertise; they learn how to connect people with technologies that can enhance their lives. Our goal is to educate people who are efficient on the job from day one, while providing the foundation for them to prosper professionally as their careers progress. You'll be able to build systems and manage information using today's technology-you'll also have the ability to design and master the technology of the future.

**Academic Advising**

Each student is assigned an academic advisor at the time of admission to graduate study. These assignments are made primarily on the basis of the student's background and interests as shown in the application. The student may at any time elect to change advisors: any such change requires the consent of the new advisor and must be reported to the Program. Forms for changing advisors are online through the School's "Current Students" Web page.

At the time of initial registration or before the completion of the first term, the student is encouraged to discuss a plan of study with their advisor. A plan of study is a series of courses designed to meet the minimum exit competencies judged by the faculty to be necessary for employment as an information professional; this plan is outlined in and completion is tracked through the Academic Advisement Report (AAR). Students coming into the program without prior course work or work experience in the areas covered by the plan of studies should adhere fairly closely to the suggested plan. If there has been course work or experience in one or more of the content areas of the program, students are permitted to substitute and take courses in an area in which additional background is needed. Substitutions and exceptions must have approval of the advisor and must be documented through the Records Office. Information regarding documenting exceptions is available on the School's Current Students webpage.

Details regarding advising and resources for tracking your degree progress (the AAR) are available on the School's Catalog page, under the Advising section.

Each student must ensure that the AAR meets all of the program requirements for graduation. At the completion of the program, the Records Office coordinates with the Department to certify all students for graduation. See the SCI Catalog page for more details and regulations pertaining to graduation.

Stricter advising guidelines and regulations apply to the doctoral students. See the doctoral program regulations for details.
Policies for the Department of Informatics and Networked Systems

Beyond the School's general Grading and Credit policies, the department may impose stricter rules. Rules pertaining to DINS students are as follows.

Maintenance of a 3.0 GPA

Each student must maintain a 3.0 Grade Point Average (GPA) for all credits of graduate level coursework for either degree or the certificate. Failure to maintain a cumulative 3.0 GPA will result in the student being placed on academic probation. If the student does not raise the GPA to a 3.0 after the next nine credits, the student will be dismissed from the program in which he or she is enrolled. Students should refer to the Academic Standing and Dismissal section of the SCI Catalog page for full definitions and explanations of the academic standing review.

Grades for Individual Courses

All students must earn satisfactory grades in each course taken. A grade of C-, D+, D, D-, F and Unsatisfactory are unacceptable for graduation credit. A course for which such an unsatisfactory grade is earned must be repeated if it is a course that is a degree requirement (e.g., INFSCI 2500). Courses may be repeated only once. Elective courses need not be repeated; another course may be taken to replace it. However, the original course remains on the transcript and a higher grade must be earned to maintain a 3.0 GPA. Full details regarding SCI Grade and Course Repeat policies are available on the School's Catalog page.

Satisfactory (S/NC) /Audit Grading System

Students are permitted to earn at most six credit hours with the grading option S as part of the credits required for the degree. An S grade is equated with a grade of B, B+, A-, A or A+. Course performance equivalent to a B- or lower will result in the assignment of an audit (N grade) and will not count towards graduation. A grade of satisfactory (S) has no quality points associated with it and is not used in calculating the GPA.

See the SCI Catalog for information regarding the selection of an alternative grading option (S/NC or Audit).

Information Science with a concentration in Telecommunications, PhD

PhD Admissions Requirements

All applicants to the School of Computing and Information must adhere to the admissions requirements outlined in the School's policies. In addition, the following are requirements for admission to graduate study in Telecommunications for pursuing a PhD degree.

1. A master's degree from an accredited university, a recognized international program, or the equivalent. Exceptional students with a technical Bachelor's degree may be admitted on occasion. Such students must still satisfy all other requirements that follow.
2. Attainment in graduate work of a minimum quality point average of 3.3 (on a scale with A having a value of 4 points per credit). An international student's quality point average will be calculated on the basis of equivalency from universities that use a different scale.
3. As evidence of the ability to undertake doctoral work, an essay (not exceeding 1000 words) indicating, as specifically as possible, the student's academic and professional goals in relation to the Telecommunications doctoral program and identifying potential areas and/or topics in which the student expects to pursue dissertation research.
4. Evidence of academic completion of:
   o Two different scientific computer programming languages,
   o Introductory class in probability and statistics
   o Differential and integral calculus

In addition, a candidate may elect to include the following optional material:
1. A complete curriculum vitae that provides an overview of education, work, publication, and other professional activities.
2. An example of published writing.
3. A description of any published or unpublished research, contributions to the professional or scholarly literature, and other professional or academic experience relevant to an assessment of his or her capacity to pursue doctoral study successfully.

Students whose complete credentials are not available for full admission may register as special students until the completed credentials are received, provided all other requirements have been satisfied. Students with deficiencies in either coursework or scholastic achievement may be admitted provisionally. Prerequisite courses should be completed within the first two terms.

### Purpose of the Degree

The Doctor of Philosophy (PhD) degree in Information Science with a Focus in Telecommunications (henceforth called PhD in Telecommunications for short) prepares students for independently engaging in advanced work in high-quality research and teaching. It provides research oriented graduate study and professional specialization in telecommunications and emphasizes both scholarly and applied research. To earn a PhD degree, a student must demonstrate breadth of knowledge, give evidence of superior scholarship and mastery of a specialized field, and must demonstrate their ability to do significant and relevant research. In addition, the student must conceive, write and defend a PhD dissertation representing a significant and original contribution to current academic research as demonstrated by a public dissertation defense and publication in established peer-reviewed academic conferences and/or journals. Major milestones en-route to the PhD degree are the preliminary examination, the comprehensive examination, the dissertation proposal, and the dissertation defense.

### PhD Degree Requirements

A candidate for the PhD should have broad knowledge of the field of telecommunications as well as a specialization in the area of major interest. Every candidate should have, in addition, a strong background in research methodologies.

The Telecommunications PhD program requires a minimum of 48 credits beyond a master's degree. Exceptional students with a technical bachelor's degree may be admitted on occasion and in such cases, a minimum of 72 credits beyond the baccalaureate degree is required. The 72 credits must include the required courses (or their equivalent) for the MST degree at the University of Pittsburgh. Also included in the 72 credits are:

- 12 credits of required courses
- 12 credits of doctoral seminars
- 6 credits of minor courses
- At least 18 credits of dissertation research and writing (no more than 18 credits applied toward graduation)
- 48 of the 72 credits must be advanced coursework beyond the MST degree (or its equivalent).

A plan of study should be designed by the advisor and student as early as possible after admission. A copy of the plan of study must be on file in the student's folder and should be consulted during each registration period.

While these are minimum credit requirements, every PhD student may be required to take more credits of coursework to obtain the breadth and depth of knowledge required to successfully complete their dissertations. Graduation depends upon meeting the minimum credit requirements and all other requirements.

### Preliminary Examination Requirement

The preliminary examination, according to Regulations Governing Graduate Study at the University of Pittsburgh, is held:

"...to assess the breadth of the student's knowledge of the discipline, the student's achievement during the first year of graduate study, and the potential to apply research methods independently. The evaluation is used to identify those students who may be expected to complete a doctoral program successfully and also to reveal areas of weakness in the student's preparation."

The Telecommunications and Networking faculty has clarified further that the overall objectives of the preliminary examination are:

- To test the PhD students for breadth of knowledge
- To evaluate their skills, and their ability to apply them
To evaluate their ability to do research, and

Eligibility and Preparation

To be admitted to the preliminary examination a student must:

1. Have completed a master's degree in a closely related field (e.g., telecommunications, information science, computer science, engineering, mathematics); Exceptional students admitted after a Bachelor's degree must have completed all pre-requisite coursework.
2. Be admitted to full graduate status (i.e., all provisional admission requirements must be completed);
3. Have attended the PhD orientation session;
4. Be registered in the term in which the preliminary examination is taken; and
5. Apply in writing and with the advice and consent of a faculty advisor to the secretary of the TPC by the announced deadline.

Traditional preparation for the preliminary examination includes graduate-level coursework and familiarity with reading and reviewing papers and identifying research gaps. In addition, doctoral students should become familiar with the proceedings of the relevant professional societies of the field and copies of recent preliminary examination papers available from the secretary of TPC.

Content and Format

The preliminary examination consists of two parts:

1) Research Project and Paper

During the first year of doctoral study, under the direction of the advisor (or another full or adjunct member of the program's graduate faculty), students will design and complete a research project. The project should reflect only those activities undertaken during the first year of study. A previous master's thesis or other work completed prior to the start of doctoral study may not be submitted for this requirement. While much research involves working in a larger team, the student's role in the project and in writing the paper should be significant. The student must be the primary author, and ideally should be the sole author. The student should seek a project or a part of a project in which the student can take the lead in conducting the research and writing up the results under the direction of the advisor. However, unlike a dissertation or thesis, the research paper submitted for the preliminary evaluation may include co-authors. In this case, the role of each co-author should be clearly stated in writing by the student and submitted along with the research paper. Furthermore, the paper may be integrated with other work and later submitted for publication with a longer list of authors.

Research papers take many forms, and some venues require particular nomenclature or forms. The paper submitted to the faculty to meet this requirement should include the following components:

- A clear statement of the problem
- An innovative idea that addresses the problem
- A survey of the relevant research literature
- An explication and implementation of a methodology for addressing the problem
- Evidence that the described idea achieves its goal
- Analysis and evaluation
- Discussion of the research, including but not limited to shortcomings of the work and directions for future work.
- A list of references

While it is possible to deviate from this structure, this should only be done with the support of the advisor.

2) Oral presentation and defense

Submission and presentation of the paper must be made not later than in the last January of the first four terms in the program. Students must complete 6 credits of doctoral courses and 6 credits of doctoral seminars before taking the preliminary examination. The due date for submission of the paper is the second Friday of January. On the fourth Friday of January, papers will be presented orally in conjunction with the IS PhD oral presentations to graduate faculty in a public forum. Each student will give a 20-minute long oral presentation of their paper to the faculty, followed
by a 20-minute discussion. All presentations will be made on a single day. Faculty will meet the same day to grade the written and oral performance. The result of the exam will be: (a) pass, (b) fail with one more chance to re-take the exam the following year, or (c) fail with no chance to re-take the exam.

Timing and Completion of Milestone

A student has to pass the preliminary exam at the earliest opportunity (within the first four semesters) and should not wait till completion of coursework to attempt the preliminary exam. A student will have successfully completed the prelim exam after passing the oral presentation and defense and completion of the coursework as required.

Every student must complete the preliminary examination within four semesters of their admission (not counting summer) into the program unless an exception is granted by the Telecommunications and Networking Program Committee (TPC). Exceptions are typically not allowed for full-time students. Exceptions may be made for part-time PhD students in consultation with their advisors. The preliminary examination consists of authorship, presentation, and public defense of a publishable quality research paper as described below.

With the successful completion of the preliminary examination, the student is fully admitted to doctoral study in telecommunications. The Program Chair will notify the student, in writing, of admission to doctoral study. After admission, the student must complete the remaining coursework including doctoral level seminars; probability and statistics, research design, and information science course requirements; and the residency requirement.

Comprehensive Exam

The student must satisfactorily pass a comprehensive examination designed to assess mastery of the general field of telecommunications, acquisition of both depth and breadth in the area of specialization within the field, and ability to use the research methods of the discipline. The purpose of the comprehensive examination is to assess the student's ability to understand a sub-area of telecommunications in depth. In order to do research, a student must be able to read, understand, present, and criticize research papers in the field. It is also important that the student be able to explain it in depth to someone who is unfamiliar with that area. Thus, this examination centers on the development of a tutorial as well as a lecture in which the student must explain the subject to the satisfaction of the entire Telecommunications faculty. From a learning perspective, this provides the student with the experience of structuring and explaining a technical topic in detail.

Eligibility and Preparation

Prior to the comprehensive examination a student must complete most of the course and seminar requirements. This includes:

1. Completed most of the of graduate course and seminar work for completion of a PhD These credits include:
   • 12 credits of doctoral level classes (as determined by the advisor),
   • 6-credits of minor requirement (Telecommunications courses excluded), and
   • 12 credits in doctoral seminars;
2. Completed a "state-of-the-art" paper to be submitted to graduate faculty two weeks prior to examination date;
3. Be registered in the term in which the comprehensive examination is taken; and
4. Apply to the Chair of the PhD program for permission to take the comprehensive examination.

Content and Format

The comprehensive examination has a written component and an oral component. In preparation for the one-hour oral examination, the examinee must prepare a written "tutorial" paper that must be submitted to the TPC two weeks prior to the scheduled exam date. The "tutorial" paper is a critical essay that explores the literature of the selected topic; the student identifies, synthesizes, and evaluates the relevant literature on the topic.

The comprehensive examination will be conducted by at least four members of the TPC faculty. The exam will be directed at the "tutorial" paper and the various relationships among the components of telecommunications. Goals of the comprehensive examination committee are to assess the student's understanding of the topic of the "state-of-the-art" paper, the theoretical framework that supports it; the quality of the student's research
skills necessary to understand, integrate, and extend knowledge gained through scholarly inquiry; and the relationships of the topic to telecommunications. The results of the exam are conveyed to the student, by the examination committee, usually within an hour after completion of the exam. The result of the comprehensive examination is a pass or fail. If a student fails, they may retake the exam one more time. A student who fails the comprehensive examination twice is no longer eligible to continue in the PhD program.

**Process**

The procedure to schedule and take the comprehensive examination is as follows:

1. The student will select a topic of interest in his research area in consultation with his advisor. When the advisor is satisfied that the student understands the subject matter in sufficient depth, the student prepares a tutorial paper.
2. The student will prepare a comprehensive literature survey of the research on this topic and prepare a tutorial document that is referenced and complete in itself. This document must not exceed 20 pages in length, with a font size of 12 pt, and margins of 1 inch on the left and right. Also, the document must be prepared so that the faculty can easily read it. A researcher in Telecommunications who is not familiar with the research topic should be able to understand and appreciate the issues in this topic by reading this document.
3. The work should be completely done by the student except for informal suggestions from the advisor. The advisor may provide only grammatical feedback; it is up to the student to decide what content is necessary, and how to organize it, because this is a crucial part of the tutorial. Occasionally, the advisor may suggest inclusion of certain topics.
4. The student finds a date for the presentation where at least four of the telecommunications faculty can attend. At least two weeks prior to the examination date, the student must deliver a final copy of the tutorial document to all faculty members.
5. It is strongly recommended that the student provide some preliminary research results on an advancement in the topic or at least reproduce the most relevant work conducted by researchers in this topic.
6. The student has to publicly present the material from this document orally on the day of the examination to the faculty in a presentation lasting 45 minutes. The presentation will be tutorial in nature with additional results if any. The faculty may question the student to assess his or her understanding of the topic in question as well as in any general topic in the area. The faculty may ask questions for clarification and to test the student's grasp of the subject as well as closely related subjects and methodologies.

The response of the TPC may take on several forms, including:

- Unconditional pass
- Conditional pass, with conditions such as
  - Additional recommended or required coursework
  - Specific modification to the tutorial paper
  - Re-attempt the oral presentation
- Fail

All Telecommunications students are encouraged to attend comprehensive exams to see what is expected and learn from the tutorial presentation.

**Timing and Completion of Milestone**

The Comprehensive should be taken after the student has completed almost all coursework, seminars, etc. and after the student has successfully completed the Preliminary examination. Typically, a student will complete the comprehensive exam within 18 months of completing the preliminary exam.

After successfully completing the comprehensive examination, the student is admitted to doctoral candidacy and works with a faculty advisor to prepare a dissertation proposal and form a dissertation committee. The dissertation proposal must be approved by the student's dissertation committee. Successful completion of the comprehensive examination and approval of the dissertation proposal permit the student's academic advisor to recommend the student for doctoral candidacy. Normally a student will begin to register for dissertation credits after being admitted to doctoral candidacy. A minimum of 18 dissertation credits is required. To be eligible for the dissertation defense the student must complete the residency requirement (three terms of full-time study of which two terms must be consecutive). The final defense of the dissertation is a public session announced in University-wide media. The dissertation must be unanimously approved by the dissertation committee.

**Candidacy and Dissertation Requirements**
Pre-Candidacy and the Dissertation Proposal

Dissertation Advisor and Committee

Students must gain the agreement of a member of the telecommunications faculty, who is also a member of the graduate INS faculty, to chair the dissertation committee that will advise the student on the area of research. In most cases, the student's academic advisor continues as the dissertation advisor and chair of the dissertation committee. The advisor's agreement is recorded in the student's file. Any request to change the dissertation advisor must be submitted in writing to the chair of the TPC and the Office of Student Services for an update to the student's digital record. Approval for the change and the selection of another dissertation advisor is filed in the student's folder.

The student's dissertation advisor:

1. Assists in choosing the dissertation committee and in confirming the eligibility of all members selected;
2. Arranges with the TPC support staff to schedule the dissertation proposal presentation;
3. Reviews progress toward completion of the research;
4. Arranges with support staff to schedule the dissertation defense;
5. Chairs the dissertation defense;
6. Secures appropriate signatures from dissertation committee members and assures that all required paperwork is submitted in accordance with the TPC, SIS, and University procedures.

The dissertation committee composition is dictated by SCI regulations; see the Doctoral Committee section of the SCI Catalog for details.

Members of the dissertation committee are to be selected by the student in consultation with the dissertation advisor. The dissertation committee is responsible for monitoring the research, conducting and evaluating the oral defense of the dissertation, and approving the final written presentation of the dissertation. The dissertation advisor directs the dissertation research and writing, but all committee members have the responsibility to assist the student as consultants. All members of the committee may vote.

According to university policy, meetings of the doctoral candidate and their dissertation committee must occur at least annually from the time the student gains Admission to Doctoral Candidacy. During these meetings, the committee should assess the student's progress toward degree and discuss objectives for the following year and a timetable for completing degree requirements.

While the student prepares a dissertation proposal, they are required to enroll in and complete a minimum of 18 dissertation credits as part of their study.

Students should refer to the School's Catalog page, specifically the advising section, for further resources on the advisor/advisee relationship.

Dissertation Proposal

The student schedules a public presentation of the dissertation proposal, notifies the telecommunications secretary, and provides a written copy of the proposal to the committee members at least two weeks prior to the presentation date. The dissertation committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree.

The dissertation proposal represents a contract between the student and the dissertation committee. The student should specify in as much detail as possible the problem they wish to solve and the method they intend to use to solve it.

Students demonstrate their ability to complete a sound project of original research by presenting and defending the dissertation proposal to their dissertation committee. The dissertation committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree. Approval of the proposal does not imply either the acceptance of a dissertation prepared in accord with the proposal or the restriction of the dissertation to this original proposal.

Originality may be reflected in a number of ways. For example, a candidate may pose an important new problem or formulate an existing problem in a novel and useful way. A candidate may investigate previously ignored material or develop new techniques for investigating issues. Extensions of previous investigations are acceptable provided they incorporate important new elements in the design or execution of the research.

Normally, a satisfactory dissertation will form the basis for one or more publishable articles. The dissertation committee may offer an opinion on the publishable content of the proposed research.
Written notice of the student's meeting with the dissertation committee to approve the proposal will be distributed to the TPC faculty at least one week in advance. The notice will contain the student's name, the title and abstract of the proposal, the date, time, and place of the meeting. The committee will conduct the proposal hearing and must unanimously approve the dissertation topic and the research plan. The student is responsible for filing a copy of the approved proposal with the department.

When the proposal has been successfully defended, the chair of the student's dissertation committee shall notify the Chair of the PhD Committee, the chair of the department, and the Dean that the student has achieved formal candidacy.

**Timing and Completion of Milestone**

The proposal may be done any time after the successful completion of the comprehensive examination. University rules require that the proposal be completed at least six months prior to the final defense of the dissertation. The timing of the proposal depends heavily on the student's dissertation project. The actual timing depends on the student's ability to demonstrate the project's feasibility to the committee. For some, this will occur early in the research cycle; for others, this will occur later. It is generally in the student's interest to do this earlier rather than later, since it defines the scope of the completed dissertation. In any case, every student should aim at completion of their dissertation proposal within one year of passing the comprehensive exam.

Acceptance of the proposal includes, to the extent possible, concrete research goals. When the student achieves the goals, the PhD research is to be considered finished. Modification of the goals can only be made collectively and should be written and signed by the student and each committee member. The student should make regular progress reports to the entire committee.

The dissertation committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree. When the proposal has been successfully defended, the chair of the student's dissertation committee shall notify the Chair of the PhD Committee, the INS Program Chair, and the Dean that the student has achieved formal candidacy.

**Candidacy**

For admission to formal candidacy for the PhD degree, a student must have:

1. Passed the preliminary examination;
2. Completed all coursework requirements (with the possible exception of dissertation credits) with a QPA of 3.3 or higher;
3. Passed the comprehensive examination;
4. Successfully presented a dissertation proposal and received permission from the dissertation committee to begin research.

When these steps have been taken, the chair of the student's dissertation committee will notify the Chair of the PhD Committee, the Chair of INS, and the Dean that the student has achieved formal candidacy. The Chair of the PhD Committee will notify the student of his admission to doctoral candidacy in writing. A copy of the notice will be placed in the student's folder. The student is expected, at this time, to schedule and present a colloquium on their research in an open forum in the School of Computing and Information.

**Dissertation Research Procedural Requirements**

The student must submit all forms, letters, and questionnaires related to the dissertation research to the TPC members of the dissertation committee for approval before any such documents are publicly distributed.

The student is also responsible for meeting University requirements when human subjects are used in research. These requirements are found in the University of Pittsburgh's Guidelines to the Use of Human Subjects in Psychosocial Research. The school has a faculty representative on the Psychosocial Institution Review Board who may be contacted with questions of procedure.

The student must prepare a final copy of the dissertation conforming to the University of Pittsburgh's Style and Form Manual for the format of the dissertation. Since the bibliographic style is best determined by the subject of the dissertation, a style manual of the student's choice may be used for the content of the dissertation and must be applied consistently throughout.

For details regarding the University's formatting guidelines and other paperwork related to the Electronic Theses and Dissertations (ETD) submission process, refer to the School's Current Students page on graduation procedures. Specifically, the PhD Graduation Checklist will assist students with resources, deadlines, and related items.
If University facilities and/or faculty time are being used in dissertation research and/or the writing of the dissertation, then students are required to register for at least 3 credits per term or such greater amount as the School or Program deems appropriate. Students who have completed all credit requirements for the PhD degree and are working full time on their dissertations, should register for fixed-fee full time dissertation credits. If the student is a doctoral candidate and off-campus, not using University facilities and/or faculty time, the candidate need only register for 1 credit per academic year to maintain active enrollment status.

**Dissertation Defense**

The purpose of the final defense is to assess the student's ability to present and defend the result(s) of their original research project. The student must be able to clearly communicate the problem, the method, the assumptions, and the results of the project. He or she must be able to clearly articulate and support all assumptions and decisions that were made toward the process of completing the project. While the student's committee makes the final decision, the defense is public and questions are accepted from any attendee.

**Dissertation**

After completing the investigation and preparing the dissertation, the candidate is advised to submit the first draft to the dissertation advisor early in the term in which he/she expects to receive the degree. This allows time for any necessary revisions and for preparation of the final copies in an acceptable style and format.

Any exceptions to the style manual approved for the School must have prior approval by the advisor. Final decisions concerning style and format rest with the student's dissertation advisor. Note the dissertation can either follow the traditional book format model or a collection of published research articles. If the latter case, the published work must be logically connected and integrated into the dissertation in a coherent manner, and sufficient detail must be presented to satisfy the characteristics of a dissertation. If the published articles were co-authored, the contribution of the student must be clearly delineated in the introduction so the committee can ascertain that the student's own work satisfies the requirements of a dissertation. Instructions on incorporating articles into the dissertation are provided in the Format Guidelines for Electronic Thesis and Dissertation Preparation at the University of Pittsburgh.

**Eligibility for the Dissertation Defense**

To be eligible to defend the dissertation, a student must have:

1. Completed the residency requirement;  
2. Requested the formal announcement of the defense in the University Times through the School;  
3. Distributed copies of the dissertation to the dissertation committee at least four weeks prior to the date of the defense.

**Registration Requirements**

Students completing their research work for the dissertation will be required to register for at least one credit in the term during which they expect either to complete degree requirements or have the oral defense. Students must submit an application for graduation for the term in which they have planned the dissertation defense. The application for graduation and the related deadlines and late fee structure are available on the School's Current Students webpage.

If a student does complete all the work in a given term, including the dissertation oral examination, and has been cleared for graduation too late to be included on the graduation list for that term, the student may apply to graduate the following term and need not enroll for any courses or any credits, subject to approval by the Dean's office.

If a student is unable to complete the work during the expected term of graduation due to some extenuating circumstances related to the School and University (beyond control of the student and attested to by the Dean's office), the student will not be required to register for additional credits in the term of graduation.

All requests for exceptions to the policy stated above should be sent to the Chair of the Department of Informatics and Networked Systems from the advisor for clearance and recommendation and then to the Dean for approval consideration.
Defense of the Dissertation

The dissertation defense is scheduled by the dissertation advisor early enough in the term to allow for necessary revisions and final editing of the manuscript before the graduation deadline. The candidate must submit copies of the dissertation to the dissertation advisor and to the dissertation committee at least four weeks prior to the scheduled dissertation defense. A copy must also be filed with the Department at least four weeks before the date of the dissertation defense meeting. Notice of the dissertation topic/title/abstract; the defense date, time, and location; and the availability of the final draft copy of the dissertation will be publicly posted and notice sent to the faculty at least one week ahead of the scheduled defense.

Dissertation defenses must be publicly announced and are open to the University community, but only the dissertation committee may vote. A student defends their dissertation successfully if the dissertation committee unanimously approves it. Although the dissertation defense is dedicated primarily to the field of the dissertation, other questions relating to telecommunications may be considered at this time. The chair of the dissertation committee serves as the session moderator.

A student who successfully defends the dissertation with conditions to be completed must satisfy those conditions with the approval of the dissertation advisor within one year.

Completion of the Dissertation

The dissertation should be completed within the statute of limitations described below. If the statute of limitations is about to be exceeded and there is evidence of reasonable progress, the Department may recommend an extension to the statute by a specific period usually not exceeding one year. It is the student's responsibility to present evidence of progress to their advisor along with a request for extension prior to the end of the statute of limitation period. All requests for extension must be approved Department; approved requests will be submitted to the Dean's Office for final action. See details regarding the statute of limitations in the SCI Catalog page.

Publication of the Dissertation and ETD Guidelines

All candidates for a PhD degree are required to submit their official dissertations electronically using the University of Pittsburgh's procedures and formatting for Electronic Theses and Dissertations (ETD). In that case, the candidate is required to pay a fee specified by the University to Student Accounts and submit various items as outlined on the School's PhD Graduation Checklist.

Any dissertation may be published after the final defense provided that the dissertation submitted for publication is approved as to form and content by the dissertation advisor and also provided that due acknowledgement is made to the University. No form of publication, however, shall relieve the student of the responsibility for following the University's Electronic Theses and Dissertations (ETD) formatting and submission guidelines as outlined on the School's PhD Graduation Checklist.

For ETD formatting guidelines and general information, please visit the University of Pittsburgh Electronic Theses and Dissertations website. For deadlines and contact information regarding the School's required graduation and ETD paperwork, please visit the School's Current Students webpage on graduation procedures.

Journal Requirement

All PhD students are required to submit an article of publishable quality (based on their dissertation) to a journal before the degree is awarded. This shall be noted when applying for graduation with signatures of the student and the advisor.

Additional Requirements

Grade Policy

Graduation depends upon meeting the minimum credit requirements and all other requirements. Graduate degrees are conferred only on those students who have completed all courses required for the degree with at least a 3.3 GPA. Grades of C or lower are unacceptable for graduation credit.
Residency Requirements

Full-time study on campus is considered most beneficial to students, but it is recognized that students may have off-campus responsibilities as well. The PhD degree, therefore, can be completed by a combination of full-time and part-time study. Three terms of full-time study are required, two of which must be consecutive and must be taken after successful completion of the preliminary examination. Full-time study is defined as nine or more graduate credits per term.

Registration Requirements

Students must register each term for the number of credits of course work, independent study, or research equivalent to the anticipated use of faculty time and University facilities. A student who has not registered for at least one credit during a 12month period will be transferred automatically to inactive status and must file an application for readmission to graduate study (and pay the application fee) before being permitted to register again. Upon readmission, the student is required to adjust the program of studies to meet current PhD degree program, School, and University requirements.

In keeping with University policy, all graduate students must be enrolled for a minimum of 1 credit in the term in which they graduate.

Doctoral students who have completed all credit requirements for the PhD degree, including minimum dissertation credit requirements, and are working full time on their dissertations, are encouraged to register for "Full-time Dissertation Study," with a fixed-fee registration per term plus fees. Enrollment in this course fulfills the University requirements for registration in the term of graduation.

Transfer of Credits

Upon petition to the faculty and with the consent of the student's advisor, a student may be granted up to 6 credits of advanced standing. This credit for graduate course work completed at another institution may be granted if the credit has not been applied to a previous degree, has been earned within the 6-year statute of limitations, and is relevant to the student's doctoral studies in the School of Computing and Information. Advanced standing is granted at the time of admission or during the first term of course work, if approved. Petitions for transfer of credits must be received at the time of application or during the first term of attendance. Transcripts verifying the graduate courses must accompany the petition along with sufficient documentation to permit the faculty to evaluate their relevance to the doctoral program.

Transfer credits must be earned at an accredited institution granting degrees at the doctoral level. No credit will be granted toward doctoral degrees for work completed in extension courses or in off-campus centers of another institution unless those credits are approved for graduate degrees at that institution. Transfer credits will not be accepted for courses in which grades lower than a "B," or its equivalent, has been received. For details, see the University's policy on transfer of credits.

Please note these transfer credits will not be applied to core courses, independent study or doctoral seminars.

Probation and Termination

All students pursuing the doctoral degree are required to maintain a cumulative GPA of at least 3.3 after admission to graduate study and for all course work applicable to the degree. Students are automatically placed on academic probation when their cumulative GPA falls below 3.3. The graduate faculty may choose to terminate students on probation for two consecutive terms. A cumulative GPA of 3.3 or better is required for admission to doctoral study and for the award of the doctoral degree. In addition, students must show adequate progress through an annual review to be held on the 2nd Friday of January.

Statute Of Limitations

All requirements for the PhD degree must be completed in not more than six calendar years from the time of first registration. Students may, in extenuating circumstances, submit a formal request for extension of their statute of limitations or for a leave of absence from the program. More details regarding the statute of limitations and extensions can be found in the SCI Catalog.
Note: All students who are candidates for doctoral degrees are governed by the regulations of the University Council on Graduate Study, which establishes minimum standards for graduate work throughout the University as well as by those regulations established by the School of Computing and Information faculty. See the University's Academic Regulations for details.

Information Science, PhD

PhD Admissions Requirements

IS PhD applicants must either have or demonstrate the following prerequisite knowledge. These courses or their equivalents should be taken before seeking admission but may be taken during the first four terms of study. All courses must be at the graduate level and may have been taken in the course of pursuing another graduate degree:

- Statistics or Discrete Math (INFSCI 2020)
- Cognitive Psychology (INFSCI 2300 or INFSCI 2350)
- Systems Analysis and Design (INFSCI 2510)
- Data Structures (INFSCI 2500)
- Database Management (INFSCI 2710)

PhD Degree Requirements

There are three stages of admission to the doctoral program:

1. admission to graduate study when the student first matriculates
2. admission to doctoral study following successful completion of the preliminary examination
3. admission to candidacy following successful completion of the comprehensive examination and the approval of the dissertation proposal.

A minimum of 48 credits, including 30 course and seminar credits beyond the master's degree, and at least 18 dissertation credits are required. Students without a master's degree will be required to take a minimum 24 additional credits of coursework or seminars, for a total of 72 credits beyond the bachelor's degree. Students who did not take the prerequisite courses as part of earlier studies should expect to complete admission requirements or equivalent courses.

A student pursuing a PhD degree is first admitted to graduate study in Information Science. During the first year of study and in preparation for the preliminary examination, PhD students should complete initial course work and attend the PhD orientation session (a two-hour review of requirements for the PhD degree).

Preliminary Examination Requirement

Preparation for the Preliminary Examination

Core Courses: Four graduate-level courses, one in each of the following areas. Students, who have taken two or more of these courses (in any cluster described below) as part of a degree at the University of Pittsburgh, may take additional courses from the remaining areas. Prerequisites for the core courses are not counted as part of the PhD course requirements.

- Research methods
  - INFSCI 2040 - RESEARCH DESIGN
  - INFSCI 2160 - DATA MINING
  - INFSCI 2591 - ALGORITHM DESIGN
- Foundations
  - INFSCI 2120 - INFORMATION AND CODING THEORY
  - INFSCI 2125 - NETWORK SCIENCE & ANALYSIS
Independent Research: Six credits of independent study focused on a research project are required. This research will normally be supervised by the student's advisor over two terms, but any IS faculty member who is a member of the graduate faculty may supervise the student. The student may opt to have different faculty supervise different parts of the independent study. The result of this research will be an original, publishable quality research paper, which will serve as the basis of the preliminary exam (see below). Previously published work may not be used to fulfill this requirement, although the independent research project might build upon previous work done by the student.

Doctoral Seminars: Three doctoral seminars (9 credits), including a required INFSCI 3005 Introduction to Doctoral Research, are required. INFSCI 3005 is offered every fall/spring and should be taken during the first year of study. This course will cover the scope of research in Information Science. Advanced doctoral seminars will be focused on single research themes.

While the preliminary examination can be taken before the completion of the core courses and doctoral seminar, the preliminary examination requirement will not be considered satisfied until all core courses and doctoral seminars are completed.

Preliminary Examination

The goal of the preliminary evaluation is to assess your breadth of knowledge and ability to conduct research in information science. The evidence of your breadth of knowledge is your performance in the core courses and seminars. The evidence of your ability to conduct research is provided by authorship, presentation, and public defense of a publishable quality research paper that:

- presents work you have done under the direction of a graduate faculty member in the department;
- demonstrates your ability to conduct research and clearly report the results of that research;
- shows your mastery of the subject matter, both in the written paper and in your oral presentation and defense.

Research Project and Paper

During the first year of doctoral study, under the direction of your advisor (or another full or adjunct member of the department graduate faculty), students will design and complete a research project. The project should reflect only those activities undertaken during the first year of study. A previous master's thesis or other work completed prior to the start of doctoral study may not be submitted for this requirement. While much research involves working in a larger team, your role in the project and in writing the paper should be significant. You must be the primary author, and ideally you will be the sole author. You should seek a project or a part of a project in which you take the lead in conducting the research and writing up the results under the direction of your advisor. However, unlike a dissertation or thesis, the research paper submitted for the preliminary evaluation may include co-authors. In this case, the role of each co-author should be clearly stated in writing by the student and submitted along with the research paper. Furthermore, the paper may be integrated with other work and later submitted for publication with a longer list of authors.

Research Paper Components

Research papers take many forms, and some venues require particular nomenclature or forms. The paper submitted to the faculty to meet this requirement should include the following components:
1. a clear statement of the problem
2. an innovative idea that addresses the problem
3. a survey of the relevant research literature
4. an explication and implementation of a methodology for addressing the problem
5. evidence that the described idea achieves its goal
6. analysis and evaluation
7. discussion of the research, including but not limited to shortcomings of the work and directions for future work.
8. a list of references

While it is possible to deviate from this structure, this should only be done with the support of your advisor.

Submission and Presentation of Research Papers

Submission and presentation of your paper must be made not later than in January following your second fall semester in the program. Students must complete the 6 credits of Independent Research Study and IS 3005 before taking the preliminary examination. The due date for submission of the paper is the second Friday of January. On the fourth Friday of January, papers will be presented orally to the IS graduate faculty in a public forum. Each student will give a 20-minute long oral presentation of his/her paper to the faculty, followed by a 20-minute discussion. All presentations will be made on a single day. Faculty will meet the same day to grade the written and oral performance. The result of the exam will be: (a) pass, (b) fail with one more chance to re-take the exam the following year, or (c) fail with no chance to re-take the exam. While the submission and presentation of your paper may be made before the completion of the core courses and doctoral seminar, the preliminary evaluation will not be considered satisfied until all core courses and doctoral seminars are completed.

Comprehensive Examination Requirement

Preparation for the Comprehensive Exam

Students will have successfully completed the preliminary examination. In preparation for the comprehensive exam, it is expected that the student will complete 3 credits of advanced statistics.

To be admitted to the comprehensive examination a student must have:

- successfully completed the preliminary examination;
- completed the 1-term residency requirement; and
- notify via e-mail the Chair of the PhD Committee and Program Chair/Secretary of the Committee of the comprehensive examination at least two weeks before the exam.

This notification should include the title of the Comprehensive Exam, the date, and the Committee members.

Comprehensive Examination

The comprehensive examination requires successful completion of the preliminary exam. The student will propose three areas of concentration. These areas must be approved by the examining committee, which will consist of the advisor who will chair the examining committee, and two other full time graduate faculty members from INS selected by the student with the approval of the adviser. To gain this approval, the student should complete and send "Comprehensive Areas of Concentration Approval" form to all committee members for their signatures. In exceptional cases, where the student's focus requires outside expertise, one committee member may come from outside the INS graduate faculty body if recommended by the advisor and approved by the chair of the PhD Program.

The student must meet with the members of the committee to discuss the topics and foci. The student, with the consent of the committee, is free to select areas within information science that are not on the list of topics on the areas of concentration from, so long as the committee is unanimous in approving the topics. Once the committee and the topic areas are selected, the student will prepare an activity and reading list with the advice and approval of the committee members. The student will then proceed with the review of literature, based on the reading list. When the student is ready, he/she will inform the advisor who will ask each member of the committee to submit one or more questions to the advisor. The advisor will be responsible for coordinating the exam with appropriate balance over the three topic areas. The student will be given the questions and allowed one
week to prepare written answers to the questions. After review of the written answers, two-hour oral examination will be scheduled and open to the public. The final reading list, questions and answers should be published and available to the iSchool community on the Schools Web site. As soon as finalized, forward this information with “Comprehensive Exam Submission Approval for Web Publishing” form to the staff, with copies sent to the PhD Chair and all comprehensive committee members. The oral examination will normally be within a week of the completion of the written exam, but in all cases no later than within three weeks. The student will make a 10-minute presentation on the key points. The oral questions will cover the answers on the written examination, and more broadly, about knowledge of the material in the three areas of concentration. The result of the comprehensive examination will be a pass or fail. If a student fails, they may retake the exam one more time.

All required forms are available on the School's Current Students webpage.

Candidacy and Dissertation Requirements

Pre-Candidacy

Once the comprehensive examination is successfully completed, the student can propose and defend a dissertation topic. The student and the dissertation advisor should select the dissertation committee.

Dissertation

Each student must write a dissertation that presents the results of a research project carried out by the student. This research project involves a substantive piece of original and independent research grounded in an appropriate body of literature.

Dissertation Credits

Doctoral students are required to take a minimum of 18 dissertation credits as a part of their study. Dissertation credits should be taken during terms when a student is actively working on the dissertation. Most research activities during the first two years of the program are better completed as part of an independent study or a doctoral seminar. In any term in which a student is enrolled for dissertation credits, the student should meet with their advisor on a regular basis to monitor that appropriate progress is being made towards the completion of the dissertation proposal or the dissertation. The specific activities in a given term should depend on the current stage of the dissertation process. In addition to writing the proposal and dissertation itself, other appropriate activities may include reviewing the literature, programming, prototyping, running preliminary studies, writing grant proposals, preparing journal articles related to the dissertation or presenting preliminary results at conferences.

Doctoral students who have completed all credit requirements for the PhD degree, including minimum dissertation-credit requirements, are encouraged to register for "Full-time Dissertation Study," with a fixed-fee registration per term plus applicable fees. Enrollment in this course provides a student with full-time status and fulfills the University requirements for registration in the term of graduation.

Dissertation Advisor

Students must gain the agreement of a member of the INS graduate faculty to chair the dissertation committee that will advise on the area of research and the design of the dissertation study. The advisor's agreement is recorded in the student's file. Any request to change the dissertation advisor must be submitted in writing to the Chair of the IS PhD Program Approval for the change and the selection of another dissertation advisor is placed in the student's file.

In most cases, the student's program advisor continues as the dissertation advisor and chair of the dissertation committee. By University regulations the dissertation advisor must be a graduate faculty member of the Department of Informatics and Networked Systems. In the event that either the student or advisor desires a change, another INS graduate faculty member may serve as dissertation advisor and chair of the dissertation committee.

The student's dissertation advisor together with the student:

- assists in choosing the dissertation committee and in confirming the eligibility of all members selected;
- arranges with the staff to schedule the dissertation proposal presentation;
• reviews progress toward completion of the research;
• arranges with support staff to schedule the dissertation defense;
• chairs the dissertation defense;
• secures appropriate signatures from dissertation committee members and assures that all required paperwork is submitted in accordance with School and University procedures.

**Dissertation Committee**

The dissertation committee composition is dictated by SCI regulations; see the Doctoral Committee section of the SCI Catalog for details.

The dissertation committee is responsible for monitoring the research, conducting and evaluating the oral defense of the dissertation, and approving the final written presentation of the dissertation. The dissertation advisor directs the dissertation research and writing, but all committee members have the responsibility to assist the student as consultants.

**Dissertation Proposal**

After successfully completing the comprehensive examination, the student, in consultation with the dissertation advisor, must prepare a dissertation proposal. The written proposal is presented to the dissertation committee and defended in a hearing before the dissertation committee.

Students must demonstrate their potential to complete a sound project of original research by presenting and defending the dissertation proposal to their dissertation committee. The dissertation committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree. Approval of the proposal does not imply either the acceptance of a dissertation prepared in accord with the proposal.

Originality may be reflected in a number of ways. For example, a candidate may pose an important new problem or formulate an existing problem in a novel and useful way. A candidate may investigate previously ignored material or develop new techniques for investigating issues. Extensions of previous investigations are acceptable provided they incorporate important new elements in the design or execution of the research.

The student must submit the dissertation proposal to the committee at least two weeks prior to the scheduled hearing. Copies of the dissertation proposal are made by the student at their own expense. When the proposal has been successfully defended, the student's dissertation advisor shall notify the Chair of the PhD Committee, the Chair of the Information Science and Technology Program, and the Dean that the student has achieved formal candidacy. After approval of the dissertation proposal, major changes may not be made without approval of the student and the dissertation committee. The student is responsible for filing a copy of the approved proposal in the IS Program office.

Electronic notice of the student's meeting with the dissertation committee to approve the proposal will be distributed to the INS faculty at least two weeks ahead of time. The notice will contain the student's name; the title of the proposal; the date, time, and place of the meeting; and a link to the electronic version of the dissertation proposal.

The dissertation proposal meeting is open to all INS faculty and PhD students who wish to attend and others by invitation of the student.

Once the comprehensive examination is successfully completed, the student is officially a doctoral candidate. After becoming a doctoral candidate, the student can propose and defend a dissertation topic.

**Candidacy**

For admission to candidacy for the PhD degree, a student must have:

• passed the preliminary examination;
• completed a minimum of 30 credits beyond the master's degree with a GPA of 3.3 or higher;
• passed the comprehensive examination;
• successfully presented a dissertation proposal and received approval of the dissertation proposal by the dissertation committee.
When these steps have been taken, and the dissertation advisor has notified the Program and the School, the Program Chair will notify the student in writing of his admission to doctoral candidacy. A copy of the notice will be placed in the student's folder. The student is expected, at this time, to schedule and present a colloquium on their research to the Program and the public.

Meetings of the doctoral candidate and the dissertation committee must occur at least annually from the time the student gains admission to doctoral candidacy. During these meetings, the advisor should assess the student's progress toward the degree, discuss objectives for the following year, and project a timetable for completing degree requirements.

**Eligibility for the Dissertation Defense**

To be eligible to defend the dissertation, a student must have:

- completed the residency requirement;
- at least four weeks prior to the date of the defense, requested the formal announcement of the defense in the University Times;
- at least two weeks prior to the date of the defense, distributed copies of the dissertation to the dissertation committee and make it available to the School's faculty. These copies are provided by the student at their own expense.

The dissertation should be completed within the statute of limitations described below. If the statute of limitations is about to be exceeded and there is evidence of reasonable progress, the Department may recommend an extension to the statute by a specific period usually not exceeding one year. It is the student's responsibility to present evidence of progress to their advisor along with a request for extension prior to the end of the statute of limitation period. All requests for extensions must be approved by the Department; approved requests will be submitted to the Dean's Office for final action. See details regarding the statute of limitations in the SCI Catalog page.

**Preparation for the Defense**

**Procedural Requirements**

The student should work with the advisor to ensure that the dissertation will be produced in an acceptable style and format. Document preparation materials are located here.

The student must submit all forms, letters, and questionnaires related to the dissertation research to the departmental members of the dissertation committee for approval before any such documents are publicly distributed.

The student is also responsible for meeting University requirements when human subjects are used in research. These requirements are found in the University of Pittsburgh's Reference Manual for the Use of Human Subjects in Research. The school has a faculty representative on the Institutional Review Board who may be contacted with questions of procedure.

The student must prepare a final copy of the dissertation conforming to the University of Pittsburgh's Style and Form Manual for the format of the dissertation. Since the bibliographic style is best determined by the subject of the dissertation, a style manual of the student's choice may be used for the content of the dissertation and must be applied consistently throughout.

If University facilities and/or faculty time are being used in dissertation research and/or the writing of the dissertation, then students are required to register for at least 3 credits per term or such greater amount as the School deems appropriate or Full-Time Dissertation Study.

**Registration Requirement**

Students completing their research work for the dissertation will be required to register for at least one credit in the term during which they expect either to complete degree requirements or have the oral defense. Students who have completed all credit requirements for the PhD degree may register for "Full-Time Dissertation Study." If the student is a doctoral candidate and off-campus, not using University facilities and/or faculty time, the candidate need only register for 1 credit per academic year to maintain active enrollment status.

If a student does complete all the work in a given term, including the dissertation defense, and has been cleared for graduation too late to be included on the graduation list for that term, the student may apply to graduate the following term and need not enroll for any courses or any credits, subject to
approval by the Dean's office. Students must submit an application for graduation for the term in which he or she has planned the dissertation defense. The application for graduation and the related deadlines and late fee structure are available here.

If a student is unable to complete the work during the expected term of graduation due to some extenuating circumstances related to the School and University (beyond control of the student and attested to by the Dean's office), the student will not be required to register for additional credits in the term of graduation.

All requests for exceptions to the policy stated above should be sent to the Program Chair from the advisor for clearance and recommendation and then to the Dean for consideration and approval.

**Defense of the Dissertation**

Dissertation defenses must be publicly announced and are open to the University community, but only the dissertation committee may vote. A student defends their dissertation successfully if the dissertation committee unanimously approves it. Although the dissertation defense is dedicated primarily to the field of the dissertation, other questions relating to information science may be considered at this time. The chair of the dissertation committee serves as the session moderator.

A student who successfully defends the dissertation with conditions to be completed must satisfy those conditions with the approval of the dissertation advisor within one year.

**Publication of the Dissertation**

The candidate for a PhD degree is required to pay a fee specified by the University to Student Accounts and submit various items as outlined on the School's PhD Graduation Checklist.

The abstract must not be more than 350 words (2450 typewritten characters) in length. With 70 characters per line there are at most 35 lines in the abstract. All copies of the abstract must be approved and initialed by the dissertation advisor in the upper right-hand corner of the abstract. The dissertation and abstract will be examined and approved by the student's dissertation advisor for style, format, and related matters.

Any dissertation may be published after the final defense provided that the dissertation submitted for publication is approved as to form and content by the dissertation advisor and also provided that due acknowledgment is made to the University. No form of publication, however, shall relieve the student of the responsibility for following the University's Electronic Theses and Dissertations (ETD) formatting and submission guidelines as outlined on the School's PhD Graduation Checklist.

For ETD formatting guidelines and general information, please visit the University of Pittsburgh Electronic Theses and Dissertations website. For deadlines, forms, and contact information regarding the School's required graduation and ETD paperwork, please visit the graduation procedures section of the SCI Current Students webpage.

**Summary of Course Requirements and an Ideal Timeline**

All students will complete:

- Required coursework (30 credits)
  - Four core courses (12 credits)
  - One introductory doctoral seminar (3 credits)
  - Two topical doctoral seminars (6 credits)
  - Two independent research studies (6 credits)
  - One advanced statistics course (3 credits)
- Dissertation work (18 credits)
- A minimum of 18 credits of dissertation study

**Typical Timeline for Coursework/Exams:**
<table>
<thead>
<tr>
<th>Year</th>
<th>Term</th>
<th>Exams/Defenses</th>
<th>Student Registers in Credits via Enrollment System</th>
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<tbody>
<tr>
<td></td>
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<td></td>
<td>INFSCI 3005 Core Course Core Course</td>
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<tr>
<td>First</td>
<td>Fall</td>
<td>INFSCI 3005</td>
<td>Core Course Doctoral Seminar Core Course Research Study</td>
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<td></td>
<td>Spring</td>
<td>Core Course</td>
<td>Doctoral Seminar Core Course Research Study</td>
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<td></td>
<td>Summer</td>
<td>Independent Study, research and/or teaching</td>
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<tr>
<td>Second</td>
<td>Fall</td>
<td>Doctoral Seminar Advanced Statistics Research Study</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Preliminary Examination</td>
<td>Dissertation Work - 9 credits</td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td>Independent Study, research and/or teaching</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Fall</td>
<td>Comprehensive Exam</td>
<td>Dissertation Work - 9 credits</td>
</tr>
<tr>
<td>Fourth</td>
<td>Fall</td>
<td>Dissertation Proposal Defense</td>
<td>Dissertation Work - FTDJ</td>
</tr>
<tr>
<td>Fifth</td>
<td>Fall</td>
<td>Dissertation Defense</td>
<td>Dissertation Work - FTDJ</td>
</tr>
</tbody>
</table>

Note: International students must maintain full-time status in Fall and Spring terms. ALL students must be enrolled in a minimum of 1 credit during their graduation term.

**Additional Requirements**

**Grade Policy**

Doctoral degrees are conferred only on those students who have completed all courses required for the degree with at least a 3.3 GPA. Courses numbered below 2000 do not meet the minimum requirements for doctoral study, although they may be taken to supplement a doctoral program.

**Residency Requirements**

Full-time residency, in addition to requiring full-time study, affords the student the opportunity for daily professional interaction with faculty and other PhD students. This interaction is a major component in the student's preparation for research. Despite the benefits that full-time residency affords, it is recognized that students may have off-campus responsibilities as well.

The PhD degree, therefore, can be completed by a combination of full-time and part-time study. Two terms of full-time study are required. Full-time study is defined as nine or more graduate credits per term. All students, whether on campus or away, must maintain active status by registering according to the requirements stated below.

Note: No matter your status, you must meet with their advisor at least once per year. Annually, students will submit an annual progress report to the PHD Program Chair, the Program Secretary and the advisor. This will take place on the second Friday of January.

**Registration Requirements**

Students must register each term for the number of credits of course work, independent study, or research equivalent to the anticipated use of faculty time and University facilities. A student who has not registered for at least one credit during a 12-month period will be transferred automatically to inactive status and must file an application for readmission to graduate study (and pay the application fee) before being permitted to register again. Upon readmission, the student is required to adjust the program of studies to meet current PhD degree program, School, and University requirements.

In keeping with University policy, all graduate students must be enrolled for a minimum of 1 credit in the term in which they graduate.
Doctoral students who have completed all credit requirements for the Ph.D. degree, including minimum dissertation credit requirements, and are working full time on their dissertations, are encouraged to register for "Full-time Dissertation Study," with a fixed-fee registration per term plus fees. Enrollment in this course fulfills the University requirements for registration in the term of graduation.

Transfer of Credits

Upon petition to the faculty and with the consent of the student's advisor, a student may be granted up to 6 credits of advanced standing. This credit for graduate course work completed at another institution may be granted if the credit has not been applied to a previous degree, has been earned within the 6-year statute of limitations, and is relevant to the student's doctoral studies in the School of Computing and Information. Advanced standing is granted at the time of admission or during the first term of course work, if approved. Petitions for transfer of credits must be received at the time of application or during the first term of attendance. Transcripts verifying the graduate courses must accompany the petition along with sufficient documentation to permit the faculty to evaluate their relevance to the doctoral program.

Transfer credits must be earned at an accredited institution granting degrees at the doctoral level. No credit will be granted toward doctoral degrees for work completed in extension courses or in off-campus centers of another institution unless those credits are approved for graduate degrees at that institution. Transfer credits will not be accepted for courses in which grades lower than a "B," or its equivalent, has been received. For details, see the University's policy on transfer of credits.

Please note these transfer credits will not be applied to core courses, independent study or doctoral seminars.

Probation and Termination

All students pursuing the doctoral degree are required to maintain a cumulative GPA of at least 3.3 after admission to graduate study and for all course work applicable to the degree. Students are automatically placed on academic probation when their cumulative GPA falls below 3.3. The graduate faculty may choose to terminate students on probation for two consecutive terms. A cumulative GPA of 3.3 or better is required for admission to doctoral study and for the award of the doctoral degree. In addition, students must show adequate progress through an annual review to be held on the 2nd Friday of January.

Statute Of Limitations

All requirements for the PhD degree must be completed in not more than six calendar years from the time of first registration. Students may, in extenuating circumstances, submit a formal request for extension of their statute of limitations or for a leave of absence from the program. The request must be submitted to the advisor and then presented to the INS graduate faculty. More details regarding the statute of limitations and extensions can be found in the SCI Catalog.

Note: All students who are candidates for doctoral degrees are governed by the regulations of the University Council on Graduate Study, which establishes minimum standards for graduate work throughout the University as well as by those regulations established by the School of Computing and Information faculty. See the University's Academic Regulations for details.

Information Science, MS

MSIS Admissions Requirements

Prerequisites for admission to the Master of Science in Information Science (MSIS) degree program include one three-credit college course in each of the following (the corresponding Pitt course numbers are indicated):

- Programming: A course on structured programming using Java, C# or C++. (INFSCI 0017 or CS 0401)
- Statistics: A course covering data collection, descriptive and inferential statistics is optimal. It should cover measures of central tendency and variability, regression, correlation, non-parametric analysis, probability and sampling, Bayesian analysis, significance tests, and hypothesis testing. (STAT 0200 or STAT 1000)
Mathematics: A college-level mathematics course, in discrete mathematics or calculus. (MATH 0120, MATH 0220, or MATH 0400). If a student has not taken this prior to enrolling, they may take INFSCI 2020 to meet this requirement.

Note: some specializations within the MSIS program of study require additional pre-requisite courses are not calculated in the total credits required to earn the degree. Please see specialization details below.

MSIS Degree Requirements

The Master of Science in Information Science (MSIS) degree is conferred upon students who have:

- acquired proficiency in the core areas of information science;
- obtained a substantial understanding of the larger problems, particularly the use, non-use, and misuse of information, and the function of information in a global society;
- completed a minimum of 36 credits that may include a practicum or thesis;
- satisfied the general University requirements relating to graduate degrees.

With the possible exception of six credits of advanced standing, all course work must be completed in residence in the MSIS degree program (i.e., registering while matriculated as an SCI student) at the University of Pittsburgh.

The student's advisor may approve certain exceptions to this policy:

- Up to six credits taken at other member institutions in the Pittsburgh Council on Higher Education (PCHE).
- Up to six credits of independent study course work may be applied toward a graduate degree in information science and will be counted as meeting one of the area (foundations, etc.) requirements.
- Up to six credits of upper-division (1000-1999) undergraduate course work may be applied toward a graduate degree in information science. These will normally be very specialized courses that meet some particular need. Prerequisite programming course work is explicitly excluded from this condition. Other credits (including the practicum or thesis) must be at the graduate level (2000 or 3000 course numbers). No University of Pittsburgh courses numbered below 1000 may be applied toward master's degree requirements.
- Up to six credits of Practicum experience. Practicum credits are counted as electives.

Approval for exceptions must be obtained PRIOR to enrollment in the course in question and must be documented with advisor approval. No combination of such exceptions will exceed 9 credits. All requirements for a specialization or general degree requirements (i.e. 2 Foundation courses, 2 Cognitive courses, and 6 Systems and Technology courses) must still be met.

Course substitutions and requirement exceptions must be obtained PRIOR to enrollment in the course in question, must have approval of the advisor, and must be documented through the Records Office. Substitutions and exceptions will be noted on the student's Academic Advisement Report (AAR).

General Track Requirements

A minimum of 36 credits is required to complete the general MSIS degree. Basic course requirements are as follows:

- 6 credits of course work in the Foundations area
- 18 credits of course work in the Systems and Technology areas (INFSCI 2500 required)
- 6 credits of course work in the Cognitive Science or Cognitive Systems areas
- 6 credits of electives—students may pursue a thesis or a practicum as one of the elective options.

Specific course requirements for the degree are outlined on the student's AAR.

Students should know that a thesis is not a requirement of the MSIS degree.

Specializations
Students may elect a specialization on their application for admission. The student then follows a more stringent distribution of credits depending on their specialization. As well, some specializations have additional pre-requisites for admission and therefore students may need to complete courses above and beyond the standard 36 credit requirement.

The following sections describe the specializations; the specific distribution of credits for the individual specializations are outlined on the plans of study. Plan of study worksheets are available on the School's Current Students web page. Students who elected a specialization are expected to review and follow the requirements of that area.

Students select their specialization on the application for admission and may change it until the end of the term in which they are to complete 18 credits. A form and instructions for changing specializations is available on the School's Current Students web page.

Students who do not meet their chosen specialization's requirements for graduation will automatically be changed to the general MSIS track.

Specializations are noted on a student's final transcripts as "Degree awarded in Master of Science in Information Science with a concentration in [specialization]."

**Big Data Analytics**

The Big Data Analytics specialization will provide the graduates of the MSIS degree program with the essential in-depth knowledge of technologies relevant to big data management. Coursework will cover the design and maintenance of infrastructure to efficiently store, easily access, and transfer over wide area networks, extremely large amounts of data. However, the volume and diversity of data make it extremely challenging to store, retrieve, analyze and utilize this information. As society will soon be routinely trying to use petabytes of data stored in multiple formats across different platforms, experts are needed who have the skills and knowledge to design, develop and deploy complex information systems and applications that deal with multi-terabyte data sets.

Students should have an undergraduate data-structures course in addition to the standard MSIS admissions pre-requisites. While this course can be taken after admission, it would require that 13 courses rather than 12 be taken to complete the degree. In addition, students must pass a data analytics examination in order to enroll in this specialization.

**Database and Web Systems**

Storage and distribution subsystems are fundamental components of any information system. As information moved to digital form, storage systems evolved into various forms of database systems. In the environment we call the World Wide Web, people interact with databases and information storage systems through web protocols using web-based interfaces to facilitate distribution.

The database and web systems specialization covers both fundamental concepts of modern database management systems (DBMSs) and advanced issues that typically arise in the context of large-scale-enterprise data management. Coursework is focused on developing practical skills in building and administering realistic database systems, data integration, data warehousing, and Web-based data management. Database research projects offer tremendous opportunities for students in specialties including scalable architectures for wide-area environments with heterogeneous information servers, query optimization in highly distributed databases, and wireless and mobile databases.

The web systems coursework introduces current Web technologies including XML, and new distributed architectures for service provision.

Students should have an undergraduate data-structures course in addition to the standard MSIS admissions pre-requisites. While this course can be taken after admission, it would require that 13 courses rather than 12 be taken to complete the degree. As well, students are encouraged to have programming experience in more than one language - C or C++ and Java are the ideal combination.

**Geoinformatics**

The goal of the Geoinformatics specialization is to provide students in the MSIS degree program with both the breadth and depth of knowledge in geoinformatics required for solving real-world problems. Students will gain the unique knowledge and skills necessary to facilitate the design, development and deployment of complex systems and applications in a rapidly emerging geoinformatics profession. Graduates of the Geoinformatics specialization will be able to deploy and manage geoinformation systems in industry, conduct research in geotechnologies, and pursue PhD research in geoinformatics.
Human-Centered Computing

Human-centered computing (HCC) is concerned with the development and management of systems in which the central focus is the user. The systems should be: aware of the user, easy to use, ubiquitous, and intelligent. In the final analysis, human-centered systems improve workplace satisfaction, capitalize on information in the environment, and act on behalf of the user. Current research in HCC focuses on the building of adaptive interfaces, navigation through information spaces, social computing, and the use of virtual environments in information science. Within this specialization, you will take courses to help you to understand humans and model their preferences, interests, and knowledge; analyze explicitly and implicitly generated data; and design systems with natural and intuitive interfaces.

Information Security

Providing security and assurance to information systems has emerged as one of the most daunting technological and social challenges of recent times. Major corporations and private industry are expending a great deal of resources to develop cybersecurity technology to secure their information systems. The School is pleased to meet the expected demand for professionals trained to protect information systems by offering the security specialization. This track will provide a unique education in the development, design, and deployment of secure information systems with an emphasis on networked information systems. It will produce information technology professionals with the ability to meet special security challenges (e.g., intrusion detection) posed by conventional and emerging network information systems.

Students should have an undergraduate data-structures course in addition to the standard MSIS admissions pre-requisites. While this course can be taken after admission, it would require that 13 courses rather than 12 be taken to complete the degree.

Telecommunications and Distributed Systems

The Telecommunications and Distributed Systems (TDS) specialization focuses on one of the fastest growing Information Technology fields. Distributed computing involves the study of information systems in which the data and computational processing is spread over more than one computer-usually in a network. Networking is critical to efficient communication among widely distributed participants and has become the backbone of industries ranging from Telecommunications firms to healthcare systems. Thanks to the Internet and more powerful computation/communication devices, industry and society are demanding more pervasive networks, more efficient and effective information systems, and more professionals trained to design and manage these complex and vital systems.

With this specialization, students will gain the knowledge and skills to face the challenges of deploying, designing, and managing distributed applications across networked systems. Graduates will be able to design and manage client-server and peer-to-peer systems, manage network-based information systems, and design networks and systems that are secure.

Students should have an undergraduate intro to Telecommunications and Networking (TELCOM 2000) course in addition to the standard MSIS admissions pre-requisites. While this course can be taken after admission, it would require that 13 courses rather than 12 be taken to complete the degree.

Master Degree Program with GSPIA

The School of Computing and Information (SCI) has a joint agreement with the Graduate School of Public and International Affairs (GSPIA). The program allows for students to complete the Master of Science in Information Science (MSIS) degree and one of three degrees in GSPIA simultaneously. To be admitted fully into the joint program, students must be accepted by both GSPIA and SCI.

Students wishing to enter this program need to submit the regular MSIS online application form, along with two recommendation letters, an official transcript, and a copy of GRE or GMAT. International students have additional submission requirements.

All students are expected to have completed the pre-requisites established for the MSIS degree program.

Course of Study for Joint Degree Students
The course of study for the Master of Science in Information Science (MSIS) degree under the joint agreement consists of a minimum of 30 credits in the MSIS program, plus an additional 30-39 credits at GSPIA depending on the selected area of study. Students must have a minimum of 24 credits of residency at SCI by the completion of the degree; Students should consult with the Records Office before enrolling in classes each term in order to ensure they are enrolling under the appropriate school code.

*Please be aware that there is a small tuition differential between the two schools.*

Degree requirements are outlined on the student's academic advisement report.

**Telecommunications and Networking, MST**

**MST Admissions Requirements**

The Department of Informatics and Networked Systems seeks students with diverse interests and abilities. The admission requirements for the Master of Science in Telecommunications degree (MST) reflect the interdisciplinary nature of our program and roughly correspond to an undergraduate degree in a technical discipline (e.g., math, physics, computer science, electrical engineering, computer engineering, information science, etc.)

- must have earned a baccalaureate degree from an accredited college or university with a scholastic average of B (3.0 on a 4.0 scale) or better
- Computer programming skill in at least one scientific programming language
- A 3-credit college level course in probability
- A 3-credit college level course in calculus

Note, other courses, such as an introduction to telecommunications class may be a pre-requisite for many courses in the program. It is not a requirement for admission but the equivalent Pitt course (TELCOM 2000) will not count toward the MST degree.

**MST Degree Requirements**

Completion of the Master of Science in Telecommunications degree requires a minimum of 37 credits. Three credits may be in practicum (a structured supervised employment situation) or a thesis. Students should know that a thesis is not a requirement of the MST degree but for research-oriented students, the faculty strongly recommends a 3-credit thesis in lieu of course work.

The 37-credit minimum of course work should include the following:

- 19 credits of required courses, including the one-credit telecommunications seminar course.
- 3 credits selected from the management/policy group.
- 15 credits of elective course work.

Specific course requirements for the degree are outlined on the student's Academic Advisement Report (AAR).

Course substitutions and requirement exceptions must be obtained PRIOR to enrollment in the course in question, must have approval of the advisor, and must be documented through the Records Office. Substitutions and exceptions will be noted on the student's AAR. Information regarding documenting exceptions is available on the School's Current Students webpage.

Students may choose to take more than the 37 credits required for the MST degree. However, the School is not able to extend any financial aid beyond the required number of courses; any visa issues pursuant to extended study would have to be resolved by the student.

**General Track Requirements**
The general course of study allows you to sample courses from all the specializations in preparation for dealing with the constant changes in telecommunications technology. Since change is the only constant in the telecommunications industry, your versatility as a generalist will enable you to handle challenges as they arise in the industry. Employers such as carriers, manufacturers, consultants, and other organizations (especially smaller ones) are seeking those graduates with a broad set of skills for careers as system engineers, network designers or managers, and telecommunications managers.

A generalist can take courses from any of the areas of specialization in consultation with the faculty advisor.

**Specializations**

Students may elect a specialization on their application for admission. The student then follows a more stringent distribution of credits depending on their specialization. As well, some specializations have additional pre-requisites for admission and therefore students may need to complete courses above and beyond the standard 37 credit requirement.

The following sections describe the specializations; the specific distribution of credits for the individual specializations are outlined on the plans of study. Plan of study worksheets are available of the school's Intranet. Students who elected a specialization are expected to review and follow the requirements of that area.

Students select their specialization on the application for admission and may change it until the end of the term in which they are to complete 18 credits. A form and instructions for changing specializations is available on the School's Current Students Web site.

Students who do not meet their chosen specialization's requirements for graduation will automatically be changed to the general MST track. Specializations for the MST are not noted on a student's final transcripts or other official documents.

**Computer Networks**

Computer networking enables efficient communication and information sharing to take place among widely dispersed participants. The global Internet-and the availability of ever cheaper, more powerful computation and communication devices-is paving the way for a new generation of ubiquitous and pervasive networks.

In this specialization, you will explore a variety of problems encountered in designing computer networks and learn common techniques to solve these problems. Courses are designed to equip graduates with the knowledge and skills required to contribute to the field of data communication and networking. The focus is on network models and architectures, protocol design and implementation, resource management, quality of service support, and security. You will acquire a solid conceptual and practical understanding of how computer network technologies operate and the ability to analyze the benefits and limitations of current and future networking technologies. You will also gain valuable insights into the design, management, and security of computer networks, and have an opportunity to take additional electives from the Department of Computer Science, depending on your interests.

**Wireless**

Wireless systems have become a vital infrastructure in today's society, and significant professional opportunities exist in this growing field. In this area, you will investigate the physical technology and enabling processes; the systems that provide cellular telephony, wireless LANs, and sensor networks; and mobile applications. You may select additional electives from the Department of Electrical and Computer Engineering. Graduates of this track have been hired by wireless carriers, manufacturers, and other organizations as system engineers and wireless network designers.

**Security**

Just as we safeguard data within computers, we must also ensure that the information flowing over networks is protected. In this specialization, you will investigate firewalls, encryption, fault tolerant network design, and other procedures for information assurance. Additional electives may be taken from both the Department of Computer Science and the Department of Mathematics. If you follow this track, you will be prepared for a career as a network security specialist with carriers, manufacturers, consulting firms, the government, financial institutions, and other enterprises.
Internet of Things

Information regarding this new specialization is forthcoming.

Big Data Analytics, ADVCT

SCI provides several options for advanced study in information science beyond a bachelor's or master's degree. The Certificate of Advanced Study (CAS) offers a highly-concentrated curriculum on the theory and application of the most current information field trends.

Students can follow a 15-credit or 24-credit plan of study.

15-credit post-bachelor's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)

15-credit post-master's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)

Course work must be completed within a period of four calendar years from the student's initial registration in the certificate program. Students interested in the CAS should consult this Web site.

Information Science, CAS

For more information regarding this certificate, visit this Web site.

Security Assured Information Systems (SAIS), ADVCT

SCI provides several options for advanced study in information science beyond a bachelor's or master's degree. The Certificate of Advanced Study (CAS) offers a highly-concentrated curriculum on the theory and application of the most current information field trends.

Students can follow a 15-credit or 24-credit plan of study.

15-credit post-bachelor's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)

15-credit post-master's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)

Course work must be completed within a period of four calendar years from the student's initial registration in the certificate program. Students interested in the CAS should consult this Web site.
Telecommunications and Networking, ADVCT

Students who have graduated from a Master's program may pursue a certificate in Telecommunications.

In consultation with an advisor, students project a Plan of Studies to meet their specific interests or needs, and these plans may change as the program proceeds. Students may select graduate-level courses in other departments within the University as well as at Pittsburgh Council on Higher Education-cooperating institutions. Admission to all courses is contingent upon meeting course prerequisites and is subject to the advisor's approval.

Candidates for the Telecommunications certificate must complete the following requirements:

- A total of 24 credits in graduate-level courses acceptable to the advisor and passed with a grade point average of at least B (3.00 on a 4.00 scale)
- Fifteen of the 24 credits must be taken from among the approved courses for the MST degree program.

Course work must be completed within a period of four calendar years from the student's initial registration in the certificate program.

Program details are available here.

Department of Information Culture and Data Stewardship

For more than 100 years, Pitt has been educating the professionals who will lead us through the information age: librarians, information and knowledge managers, archivists, and digital-content managers. As the nature and form of information evolves and becomes more complex with each passing year, the education of its managers becomes increasingly vital.

Our Information Culture and Data Stewardship Program offers an array of graduate degree programs and specializations designed to prepare students for careers in this critical profession. We offer one of the most recognized programs in the nation - our Master of Library and Information Science (MLIS) degree is accredited by the American Library Association (ALA).

The Doctor of Philosophy Program prepares students for advanced work in research, teaching, and administration. The program will give students the opportunity to gain the skills in teaching or research appropriate for careers at major research universities, teaching institutions, and library systems.

From the faculty who drive our reputation as a top-tier research university to our course work, which is highly relevant to a field that is always changing, the School offers the right environment to prepare you for a successful and challenging career in the library and information science field.

Academic Advising

Each student is assigned an academic advisor at the time of admission to graduate study. These assignments are made primarily on the basis of the student's background and interests as shown in the application. The student may at any time elect to change advisors: any such change requires the consent of the new advisor and must be reported to the Program. Forms for changing advisors are online through the School's Current Students webpage.

At the time of initial registration or before the completion of the first term, the student is encouraged to discuss a plan of study with their advisor. A plan of study is a series of courses designed to meet the minimum exit competencies judged by the faculty to be necessary for employment as an information professional; this plan is outlined in and completion is tracked through the Academic Advisement Report (AAR). If there has been course work or experience in one or more of the content areas of the program, students are permitted to substitute and take courses in an area in which additional background is needed. Substitutions and exceptions must have approval of the advisor and must be documented through the Records Office. Information regarding documenting exceptions is available on the School's Current Students Web page.

Details regarding advising and resources for tracking your degree progress (the AAR) are available on the School's Catalog page, under the Advising section.

Each student must ensure that the AAR meets all of the program requirements for graduation. At the completion of the program, the Records Office coordinates with the Department to certify all students for graduation. See the School's Catalog page for more details and regulations pertaining to graduation.
Departmental Policies

Grade Policies for Graduate Students

Maintenance of a 3.0 GPA

Each student must maintain good academic standing with a 3.0 Grade Point Average (GPA) for all credits of graduate level coursework. Failure to maintain a cumulative 3.0 GPA result in the student being placed on academic probation. For full details regarding academic standing, see the Academic Standing and Dismissal section of the SCI Catalog.

Grades for MLIS Core Courses

The four required core courses are:

- LIS 2000
- LIS 2005 (or LIS 2224 for AIS students)
- LIS 2600 (or an approved advanced technology course substitute)
- LIS 2700 (or LIS 2215 for AIS students, or LIS 2774 for SLCP students)

A student must earn a grade of B or better in each core course. If a grade of B or better is not earned in a core course, the student must register for the course in the next term offered and earn a grade of B or better. A core course may be repeated only once; all other School policies regarding the repetition of courses apply (see Academic Standing and Dismissal section).

Grades for Elective Courses

All students must earn satisfactory grades in each elective course taken. Grades of C-, D+, D, D-, F and Unsatisfactory are unacceptable for credit toward graduation. A course for which such a grade is earned must be replaced with another course or retaken, with a higher grade earned. In either case, a higher grade must be earned and a 3.0 GPA must be maintained. A course for which a grade of C- or lower was earned may be repeated only once.

Academic Provisional Admission

At the discretion of the faculty, a limited number of students who do not meet the 3.0 GPA minimum required for full admission into the MLIS program may be considered for admission. If such students are able to provide additional evidence of academic potential (e.g., outstanding scores on the Graduate Record Exam or the Miller Analogies Test) or professional potential (e.g., outstanding letters of recommendation and/or outstanding work experience), they may be admitted to the MLIS program with academic provisions. Such students must earn a B average (3.0 GPA) in the first twelve credits earned toward the degree. Failure to achieve a cumulative 3.0 GPA at the conclusion of the first twelve credits, may result in dismissal from the MLIS program.

Incomplete Grades and Class Enrollment for Master's Students

A master's student who has two incomplete grades (either "G" or "I") on their transcript will be barred from enrolling in further courses until the incomplete coursework and grades have been resolved.

Stricter grade guidelines and regulations apply to the doctoral students. See the doctoral program regulations for details.

Library and Information Science, PhD

PhD Admissions Requirements
The Department of Information Culture and Data Stewardship seeks students with diverse educational and career backgrounds. By nature LIS degrees are multi-disciplinary, and we welcome applicants with bachelor's degree and/or advanced degree from diverse disciplinary backgrounds. Our multi-disciplinary nature is reflected in the wide range of standardized tests that are accepted by our admissions committee, which include the GRE, MAT, MCAT, GMAT, and LSAT

**Supporting Documents for Admission**

As evidence of the ability to undertake doctoral work, the student's application must be accompanied by:

- An essay (not exceeding 1,000 words) indicating, as specifically as possible, the student's detailed academic and professional goals in relation to the Library and Information Science doctoral program and discussing in detail potential areas and/or topics in which the student expects to pursue dissertation research. Students SHOULD identify one or more ICDS faculty members with whom they want to work.
- A complete curriculum vitae that provides an overview of education, publications, work, and other activities.
- At least one example of scholarly research or professional writing in any format (print or electronic), which should be authored solely by the applicant. The applicant should explain the status of any published or unpublished research, thesis, contributions to the professional or scholarly literature, and other professional or academic experience relevant to an assessment of his or her capacity to pursue research successfully. If the only suitable writing sample available for submission is a co-authored publication, the applicant must explain the nature and extent of his or her contribution to the work (e.g., percentage of the finished work written by the applicant), and should attach additional evidence as verification (for example, a statement by the primary author or co-author of the work, confirming the parts of the work contributed by the applicant).
- If the candidate has had appropriate professional work experience in libraries, information centers, publishing, the information industry, education, or similarly related areas of professional activity, a brief description should be provided. Credentials of prospective students are reviewed by the ICDS Committee on Doctoral Studies.

However, students who are applying for financial aid should be aware that they must be admitted and meet financial aid deadlines to ensure consideration for funding.

Beyond the criteria and materials previously outlined for application submission, these programs do not require specific coursework for admissions consideration.

**Academic Advising and Plan of Studies**

An advisor will be assigned to the student upon entering the program; however the student is free to select a different advisor for subsequent advising and registration. The PhD student should seek a faculty Program Advisor who is knowledgeable in the student's major area of study. The advisor must be a member of the graduate faculty in the Information Culture and Data Stewardship Department who is able to spend the time and effort necessary for the advising role, will be available for examinations, and with whom a productive and comfortable working relationship can be established.

**Program Advisor**

The advisor selected by the student for the period prior to the dissertation stage of the program is the Program Advisor. The Program Advisor and the Dissertation Advisor may be the same person, but the student has the option to select a different advisor for the dissertation. Upon agreement of the faculty member to act as the student's advisor, the signed agreement is placed in the student's folder. Any subsequent change of Program Advisor should be submitted in writing to the Chair of the ICDS Committee on Doctoral Studies and placed on record in the student's folder.

Doctoral students are ultimately responsible for their own direction and progress through the program and are encouraged to seek advice from any member of the SCI faculty or other University faculty in this endeavor. The Program Advisor, however, is the one primarily responsible for providing guidance, insight, advice, information, explanation of University and School policies, and general assistance in the pursuit of the PhD degree. The Program Advisor will also approve those actions requiring a faculty signature.

The Program Advisor assists the student in

1. developing a plan for the program of studies and
2. arranging for the preliminary and the comprehensive examinations.

**PhD Degree Requirements**
This PhD degree requires a minimum of 54 credits beyond the master's degree with a total credit minimum of 72. A minimum of 36 credits must be taken in advanced course work. The student must receive a letter grade in each course taken in this 36-credit requirement, except for the teaching practicum course.

An additional 18 credits are required which must be applied to dissertation research and writing; however, regardless of the number of credits taken, no more than 18 credits for dissertation research and writing may be applied toward graduation. The grade for these credits will appear as an "S" on the student's transcript. In order to register for, and successfully complete, dissertation credits, students must show evidence of work toward the dissertation by completing the "Dissertation Credit Tracking Checklist" and updating it at the end of the term.

The minimum of 36 credits of course work, all of which must be on the graduate level, must be distributed as follows:

- 3 credits: LIS 3000 - INTRODUCTION TO DOCTORAL STUDIES
- 9 credits: 3000-level doctoral seminars offered by SCI
- 3 credits: LIS 3950 - TEACHING PRACTICUM or FACDEV 2200 - PRACTICUM ON UNIVERSITY TEACHING
- 6 credits: Courses in research methodology and statistics
- 6 credits: Courses in cognate field
- 9 credits: Courses may be:
  - 3000-level independent studies or doctoral seminars offered by SCI
  - Additional 3000-level doctoral seminars offered by SCI
  - Additional cognate courses (up to 6 credits)
  - Additional research methodology courses

**Additional Requirements**

**GPA REQUIREMENT**

PhD degrees are conferred only on those students who have completed all courses required for the degree with at least a 3.50 GPA.

**COGNATE REQUIREMENT**

Doctoral students are required to devote some portion of their studies to work on other disciplines in order to broaden their perspectives and deepen their understanding of library and information science. To fulfill the cognate requirement, students are required to take a minimum of 6 credits and a maximum of 12 credits in some area of graduate study outside the field of library and information science. These credits may be from more than one department or school.

Students may enroll for all or part of their cognate course work at institutions other than the University of Pittsburgh, but only when prior approval has been obtained from the ICDS Committee on Doctoral Studies. Courses in the School of Computing and Information generally cannot be used to fulfill the cognate requirement. Cross listed courses may be counted as cognates if they originate outside the School. SCI courses may occasionally be approved as cognate courses if the subject matter is highly specialized and clearly distinct from the student's disciplinary focus; students must petition the ICDS Committee on Doctoral Studies for approval in advance of registering for the course. Cognate areas and courses shall be selected with consultation and approval by the student's advisor.

If a student has significant course work at the graduate level or an advanced degree in another discipline and desires that it be considered as the cognate field, the student has the right to petition the ICDS Committee on Doctoral Studies for exemption from the cognate requirement. A minimum of 36 course credits and 18 credits of dissertation writing and research will still be required for the PhD students who opt to petition for exemption from the cognate requirement. Such a petition should be submitted as early as possible, preferably in the first term, in order to plan a coherent program of study.

**RESEARCH METHODOLOGY REQUIREMENT**

Research methodology courses may include courses in statistical analysis, general research methodology, and specific research methods or research methods used in specific fields of study, for instance, historiography, ethnography, or case and field study. Doctoral students should work with their advisors to identify the appropriate research methodology courses.

Research methodology courses may be taken within SCI or in another School. Research methodology courses taken from schools outside SCI cannot be used to fulfill the cognate requirement.
The research methodology course requirement must be fulfilled prior to taking the Preliminary Examination.

TEACHING PRACTICUM

A three-credit teaching practicum is required for all doctoral students in order to provide the student with teaching experience that may become part of the student's professional dossier. The teaching practicum is usually taken after completion of two terms of study. The student is responsible for identifying an appropriate course related to his or her area of interest, and obtaining the agreement of the instructor of record. Appropriate activities as part of the teaching practicum include involvement in course design, attendance at all class sessions, presentation of some course materials, office or tutorial hours, and involvement in grading. The student's teaching responsibility should involve preparation and presentation of specific topics throughout the term, and sole responsibility for at least one class session. The teaching practicum is graded on a pass/fail basis.

Doctoral students may also fulfill this requirement by completing the University Teaching Practicum course offered through the Faculty of Arts and Science. The course, FACDEV 2200, is a graduate seminar designed for Teaching Assistants and Teaching Fellows who will be teaching a class independently for the first time.

PUBLIC PRESENTATION REQUIREMENT

During the course of the PhD program, each student is required to make a formal presentation to faculty and students in the School or in another academic setting. The topic of this presentation may be a research project the student is engaged in or preliminary results of the dissertation project. This presentation may be a guest lecture in a course, a public colloquium, a presentation sponsored by the Doctoral Guild or a presentation at an academic conference. Documentation of presentation should be provided for inclusion in the student's file.

Attendance at colloquia is required of students in their term of residence, and is recommended throughout the PhD program.

Probation and Termination

All students pursuing the LIS doctoral degree are required to maintain a cumulative GPA of at least 3.5 after admission to graduate study for all course work applicable to the degree. Students are automatically placed on academic probation when their cumulative GPA falls below 3.5. The graduate faculty may choose to terminate students on probation for two consecutive terms. A cumulative GPA of 3.5 or better is required for admission to LIS doctoral study and for the award of the LIS doctoral degree. In addition, students must show adequate progress in the subsequent benchmark examinations and defenses.

Each student will submit a LIS Doctoral Student Annual Progress Report in the spring term for review by the ICDS Committee on Doctoral Studies.

Residence and Registration Guidelines

The University's Regulations Pertaining to Doctoral Degrees contains myriad policies related to registration and residence. Students must review these regulations as well as those governed at the School level. In addition PhD students should adhere to the following guidelines.

A student may not register for dissertation credits until the successful completion of the preliminary exam.

Full time dissertation study is achieved once all required courses (36 credits minimum) and all dissertation credits (18 credits of LIS 3999 minimum) are completed. Once the preliminary exam is successfully completed (after a minimum of 24 credits of coursework) students may begin taking a combination of dissertation credits and required credits until both requirements have been completed. Students may, with the approval of their dissertation advisor, register for up to 9 dissertation credits per semester until the 18 credits are achieved, but a combination of dissertation credits and required coursework can also be taken in each semester, so long as at least 9 credits of one or the other or both are taken in each fall and spring semester. If additional coursework (beyond the required 36 credits) is desired by the student or recommended by the advisor (for example, additional coursework in statistical methods, programming, additional cognate courses, etc.), a mix of dissertation credits and such additional coursework may be taken as well (for example, 6 credits of dissertation and one 3-credit additional course, or 3 credits of dissertation and 6 credits of additional coursework).

Doctoral students who have completed all credit requirements for the PhD degree, including the 36 required credits and the 18 dissertation credits (54 credits total), have had their Dissertation Proposal approved, and are working full time on their dissertations, should register for "Full-time Dissertation Study." Enrollment in this course fulfills the University requirements for registration in the term of graduation.
International students studying on an F-1 visa must maintain full-time registration status on an exact and regular basis that is stricter than the residency rules required by the school as stated above. Due to federal immigration regulations, if the term preceding a student entering full-time dissertation status occurs during the fall or spring terms, the student must enroll full-time (9 or more credits). A "reduced course load" request cannot be approved by the Office of International Services (OIS) unless the request is made for the student's term of graduation. Even if a student needs to complete only 6 credits before entering full-time dissertation status, federal regulations trump the school's program requirements and they must enroll full-time in all fall and spring terms excepting their term of graduation.

Preliminary Examination

Eligibility

To be admitted to the preliminary examination a student must:

- Have completed 24 credits of study or be completing 24 credits in the exam term, including 6 credits from courses in research methodology and/or statistics
- Be registered in the term in which the preliminary examination is taken;
- Apply in writing and with the advice and consent of a faculty advisor to ICDS support staff by the announced deadline.

Students (whether full-time or part-time) are encouraged to take the preliminary examination, with the advice of the faculty advisor, as early as possible. Full-time students MAY take the preliminary examination near the end of the 1st year spring term and SHOULD take it no later than the 2nd fall term.

Preliminary Examination Procedure

Upon completion of 24 credits of coursework, the student will submit to faculty for review a portfolio comprising the best representation of work completed thus far. Each student will also be required to present this portfolio to the ICDS Committee on Doctoral Studies as a whole, and the whole committee will vote on whether or not the portfolio is acceptable. A date for the portfolio presentation for the Preliminary Examination will be set at the beginning of each term. Students are required to submit their portfolio to ICDS Department support staff two weeks in advance of the Preliminary Examination. Preliminary Examinations are held in the fall and spring terms.

Preliminary Examination Portfolio

The preliminary evaluation will be based on breadth and depth of knowledge as addressed through coursework, as well as whether the coursework taken will support the research plan of the student. This portfolio will minimally consist of the following elements:

1. Course plan
   - List of courses completed with dates
   - Projected list of remaining courses with dates
   - Notations concerning how all course requirements are to be met

2. Research prospectus
   - Research prospectus or plan and how this relates to coursework (taken and planned). This section will consist of a proposed area of concentration for the dissertation, justification for the research, and description of the methodological approach in some detail. It will also include an analysis of what types of resources will be needed to carry out the plan and to support the student through completion of the dissertation.

3. Two examples of major work
   - Two examples of major work completed while working towards the PhD (for example, a substantial coursework assignment, and a published or submitted conference paper or journal article). At least one of these should be a significant piece of writing, authored solely by the candidate. The other can also be a paper or could be another type of work demonstrating depth of knowledge and research in an area. If a jointly authored paper is included in the portfolio, the candidate should be named as the first author, and s/he must explain the nature and extent of the contributions of each co-author.

4. Additional items
   - Professional activities (e.g., papers presented at conferences)
   - Awards
Preliminary Examination Outcomes

The Chair of the ICDS Committee on Doctoral Studies will respond to the presentation with an evaluation memo to the student either noting the acceptability of the portfolio or noting the areas in which the student is deficient. The memo may be very specific and prescribe specific types of courses, work products, or other elements necessary for the student to complete their research plan or the required course work. If a portfolio is not passed by a majority of those hearing the case, the student may make a second attempt in a later term.

With the successful completion of the preliminary examination, the Chair of the ICDS Committee on Doctoral Studies will notify the student in writing of admission to doctoral study and will note the results on the Preliminary Examination Results Form.

Failure to pass the Preliminary Examination on the second attempt will result in dismissal from the doctoral program.

Failure to pass the Preliminary Examination by the end of the second spring term (or third spring term for part-time students) will result in dismissal from the doctoral program.

Comprehensive Examination

Eligibility

To be admitted to the comprehensive examination a student must:

- Have completed 36 credits of study
- Be registered in the term in which the comprehensive examination is taken;
- Apply in writing using the "Application to Sit for the Comprehensive Exam" form and with the advice and consent of a faculty advisor to the ICDS Department support staff at least six weeks before the scheduled exam time.

Full-time students should take the comprehensive exam in the fall or spring term of the second year. All students must successfully complete the Comprehensive Exam within 18 months of passing the preliminary examination (24 months for part-time students).

Comprehensive Examination Procedure

In the Information Culture and Data Stewardship Department, the Comprehensive Examination will have written and oral components, and will normally be offered in the fall and spring terms. Students will notify their advisor and the Chair of the ICDS Committee on Doctoral Studies of their interest in taking the Comprehensive Examination at least six weeks prior to the examination date, using the form provided. The dates for each student will be determined in consultation with the student and the student's comprehensive examination committee.

Students will be examined in two areas:

- A broad perspective in current issues in library and information science, or archival studies, and
- The student's designated research focus.

In the PhD Library and Information Science program, the following procedures apply:

- The examination will be conducted by a 3-person committee: the student's advisor and two faculty members chosen by the student and the faculty advisor. Faculty members chosen to serve on the committee must give their consent.
- The examination will consist of two parts: a written, take-home exam over two weeks (three weekends) and an oral examination conducted by the student's committee.
- The written examination will consist of four questions, two in each of the areas of the examination. The student will choose one of the two questions in each area. Though the student is required to answer only two questions, there is the expectation that the response will be comprehensive and include a high level of analysis of the material. In terms of length, 12-15 pages would constitute a minimal answer for each question though longer papers are expected. The student will be given two weeks (including three weekends) to complete the written examination.
The second part of the examination will be an oral examination expanding on any points from the written work that the committee wishes to address or any questions arising from the broad, general area of interest. The oral examination (approximately two hours) will take place as soon as possible after the written component has been evaluated.

**Comprehensive Examination Outcomes**

The result of the comprehensive examination will be a pass or fail. If a student fails, he/she may retake the exam one more time. Students use the Comprehensive Examination Results Form to document this benchmark. Failure to pass the Comprehensive Examination on the second attempt will result in dismissal from the doctoral program.

Failure to pass the Comprehensive Examination within the required time frame of within 18 months of passing the preliminary examination (or 24 months for part-time students), will result in dismissal from the doctoral program.

**Dissertation**

**Dissertation Advisor**

Students must gain the agreement of a member of the ICDS graduate faculty to chair the Dissertation Committee that will advise on the area of research and the design of the study. The advisor's agreement must be obtained and recorded in the student's file. Any request to change the Dissertation Advisor must be submitted in writing to the Chair of the ICDS Committee on Doctoral Studies after discussion with the Dissertation Advisor. Students retain the right to change advisors with impunity. It is important for students to be aware of and sensitive to various issues, including: 1) the importance of mutual consideration in the relationship between advisor and advisee; and 2) the academic benefits of continuity in the relationship with a major advisor and other members of the dissertation committee. Approval for the change and the selection of another Dissertation Advisor is filed in the student's folder.

The student's dissertation advisor:

- Assists in choosing the members of the Dissertation Committee and in confirming the eligibility of all members selected;
- Arranges with ICDS support staff to schedule the dissertation proposal presentation;
- Reviews progress toward completion of the research;
- Arranges with LIS support staff to schedule the dissertation defense;
- Chairs the dissertation defense;
- Secures appropriate signatures from Dissertation Committee members and assures that all required paperwork is submitted in accordance with the ICDS, School of Computing and Information, and University procedures.

**Dissertation Committee**

The Dissertation Committee, selected by the student and major dissertation advisor, shall consist of at least four members, with the majority being from the graduate faculty of the School of Computing and Information. At least one, but not more than two, should be from another School of the University. Work in the cognate area may provide the student with the opportunity to select an appropriate outside member for the Dissertation Committee from a discipline related to the student's area of specialization. Upon the recommendation of the Dissertation Advisor, and with the approval of the LIS Committee on Doctoral Studies, a member may be appointed from outside the University. Outside members of the Dissertation Committee are not obligated to attend dissertation related events in person. If an outside person from another University or agency does attend in person, the ICDS Department is not responsible for covering any expenses involved in the attendance of the outside member at meetings. Finally, the major advisor proposes the members of the committee for approval to the ICDS Doctoral Program Chair and the Dean, using the Doctoral Committee Form to document approval of committee composition.

Meetings of the doctoral candidate and the Dissertation Committee must occur at least annually from the time the student gains admission to Doctoral Candidacy. During these meetings, the committee should assess the student's progress toward the degree, discuss objectives for the following year, and project a timetable for completing degree requirements.
Any language requirement relates to proficiencies necessary for successful completion of doctoral research. Depending upon the student's program, proficiencies in modern languages, linguistics, and/or computer languages may be specified. The student's Dissertation Advisor will determine the language requirement in consultation with the Dissertation Committee at the time the proposal is accepted.

**Dissertation Procedural Requirements**

The student must submit all forms, letters, and questionnaires related to the dissertation research to the ICDS members of the Dissertation Committee for approval before any such documents are publicly distributed.

The student is also responsible for meeting University requirements when human subjects are used in research. These requirements are enforced by the University's Human Research Protection Office (HRPO) and the Institutional Review Board (IRB). The school has a faculty representative on the Institutional Review Board who may be contacted with questions of procedure.

Bibliographic style is best determined by the subject of the dissertation; a style manual of the student's choice may be used for the content of the dissertation and must be applied consistently throughout.

The final approved version of the dissertation must be submitted electronically to the University. For the full instructions on the formatting and submission of Electronic Thesis and Dissertation (ETD), please visit the University's ETD Web site and the SCI Current Student Web site.

**Dissertation Proposal Defense**

Prior to scheduling the dissertation proposal defense, the student must have completed all required coursework, and successfully completed the Preliminary and Comprehensive Examinations, which may not be scheduled in the same term as the dissertation proposal defense.

The student should defend the proposal of the dissertation within 18 months of successfully completed the comprehensive exam (24 months for part-time students). All students must successfully complete the Dissertation Proposal Defense within 24 months of passing the Comprehensive Examination (36 months for part-time students). Failure to successfully complete the dissertation proposal defense within the required time period will result in dismissal from the doctoral program.

The student should work closely with the Dissertation Advisor during the preparation of the proposal for dissertation research. Only when the proposal is reviewed and approved by the Dissertation Advisor will the student initiate the proposal defense process. The proposal must be submitted to the members of the Dissertation Committee at least two weeks prior to the scheduled time of the proposal defense. The presentation portion of the proposal defense is an open event and will be announced to the faculty and students in the school. If scheduling problems for committee members occur, telephone conferencing may be used. Faculty discussion about the presentation is closed and only the members of the Dissertation Committee will participate.

The Dissertation Committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree. However, approval of the proposal does not imply either the acceptance of a dissertation prepared in accordance with the proposal or the restriction of the dissertation to this original proposal. Please use this Proposal Defense Results form to document the results of the defense.

**Candidacy**

For admission to formal candidacy for the PhD in LIS degree, a student must have fulfilled the following requirements:

- Passed the Preliminary Examination;
- Completed a minimum of 36 credits beyond the master's degree with a GPA of 3.5 or higher;
- Passed the Comprehensive Examination;
- Successfully defended the dissertation proposal and received permission from the Dissertation Committee to begin research.

When these steps have been taken, the chairperson of the student's Dissertation Committee will notify the Chair of the ICDS Committee on Doctoral Studies, the Chair of the Information Culture and Data Stewardship Department, and the Dean of SCI that the student has achieved formal candidacy.
Dissertation

In accordance with the University Regulations Pertaining to the Doctor of Philosophy, each student must write a dissertation that presents the results of a research project carried out by the student. An appropriate research project involves a substantive piece of original and independent research, grounded in an appropriate body of literature, and employing systematic methods and procedures to investigate a defined question or problem. It is relevant to an identifiable field as it is currently practiced, and provides a significant contribution or advancement in that field. It presents either a hypothesis tested by data and analysis, or an analysis of data supporting the development of a theory, or leading to new or substantially improved insights. It is the responsibility of the student's doctoral committee to evaluate the dissertation in these terms and to recommend the awarding of the doctoral degree only if the dissertation is judged to demonstrate these qualities.

Characteristics which a dissertation should demonstrate are:

- The establishment of a historical context for the presentation of an innovative and creative approach to the problem analysis and solution;
- A clear understanding of the problem area as revealed by analysis and synthesis of a broad literature base;
- A well-defined research design;
- Clarity in composition and careful documentation;
- Results of sufficient merit to be published in refereed journals or to form the basis of a book or monograph
- Sufficient detail so that other scholars can build on it in subsequent work;
- The preparation of the author to assume a position within the profession.

Dissertation Defense

The student should work with the Dissertation Advisor to decide the right time for dissertation defense. The student must obtain the Dissertation Advisor's approval before initiating the dissertation defense process. The student is responsible for presenting one copy of the dissertation in final form to each member of the Dissertation Committee at least two weeks prior to the date of the defense. The deliverable format is to be determined by each individual committee member.

The date, time, location, and subject of the dissertation defense shall be publicized in The University Times four weeks before the defense is held. All members of the Dissertation Committee and such other persons as are interested may attend the final defense, but acceptance of the dissertation is determined by a vote of members of the Dissertation Committee. Only members of the Dissertation Committee may be present during the final deliberations and may vote on the passing of the candidate. A report of this examination, signed by all the members of the Dissertation Committee, must be sent to the ICDS Department Chair and to the Dean. If the decision of the committee is not unanimous, the case is referred to the Dean for resolution. The Chair of the Dissertation Committee should ensure that the dissertation is in final form before requesting signatures of the members of the committee.

A student who defends the dissertation, but with conditions to be met before the degree can be awarded, must meet those conditions within the required time frame:

- Minor corrections (largely presentation, e.g., typographical errors) - to be completed within one calendar month, subject to approval by the Dissertation Advisor;
- Substantial amendments (involving more significant revisions and/or additions, e.g., rewriting sections of chapters) - to be completed within three calendar months, subject to approval by members of the Dissertation Committee.

In both of the above cases, the student's statute of limitations will automatically be extended if necessary for the period specified, without the need for a petition.

A student who does not successfully defend the dissertation, may revise and resubmit the dissertation for examination within the time frame allowed by their statute of limitations.

Students must be registered for at least one credit or full-time dissertation credit in the term in which they defend their dissertation.

GRADUATION
Eligibility

The student must have successfully defended their dissertation and received final approval of the dissertation, including all corrections, by the Dissertation Committee. All students apply to graduate; receipt of the graduation application initiates a review of the student's coursework, grades, and milestone completion. As well, an international student's SEVIS record will be updated with a new "program end date." Registration is required for a minimum of one credit (or full-time dissertation) in the term of graduation although exceptions may be approved by the Dean's Office on a case-by-case basis. Finally, the student's Dissertation Chair and the School's Director of Records must approve the submission and publication of the Electronic Thesis and Dissertation (ETD).

For the full instructions on the formatting and submission of ETDs, please visit the University's ETD Web site and the SCI Current Student Web site.

Statute of Limitations

All requirements for the PhD degree must be completed in not more than 6 calendar years from the time of first registration (or 8 calendar years for part-time students). Students may, in extenuating circumstances, submit a formal request for extension of their statute of limitations or for a leave of absence from the program. Requests for either an extension to a statute of limitations or for a leave of absence are submitted through online forms; these forms are shared with the student's advisor and then presented to the ICDS Committee on Doctoral Studies for a decision.

In all other matters of policy, see the University and School's Catalogs, consult with the School's Director of Academic Records.

Library and Information Science, MLIS

MLIS Admissions Requirements

The Department of Information Culture and Data Stewardship seeks students with diverse educational and career backgrounds. By nature LIS degrees are multi-disciplinary, and we welcome applicants with bachelor's degree and/or advanced degree from diverse disciplinary backgrounds. Our multi-disciplinary nature is reflected in the wide range of standardized tests that are accepted by our admissions committee, which include the GRE, MAT, MCAT, GMAT, and LSAT.

Beyond the criteria and materials previously outlined for application submission, these programs do not require specific coursework for admissions consideration.

MLIS Degree and the Profession

The role of information professionals has changed dramatically as the volume of available information has increased and technology for information search and retrieval has advanced. The ability to manage the growing array of information tools has led to new opportunities for those who want to work in the information field, a discipline which bridges the management of both traditional and emerging information sources. The MLIS program, accredited by the ALA through 2020, is responsive to the information marketplace and encourages the development of creativity, professionalism, and a proactive attitude to the needs of various clienteles in library and information service environments.

Upon completion of the Master of Library and Information Science degree, graduates will incorporate the theories, knowledge, skills, ethical foundations, and social responsibilities of the information professions into critical and reflective professional practice for the benefits of individuals and communities. The MLIS degree program integrates library, archival, information, data sciences and data stewardship within the information professions.

Specifically, MLIS graduates will be able to:

Goals for Graduates of the MLIS program
1. Identify and communicate the ethical and historical foundations and core values of the information professions, data professions, and related disciplines.
2. Apply principles of the management of information and organizations to various functions in data and information environments.
3. Select, plan, implement, and apply information technology using creative, contextualized, and ethical approaches.
4. Design, plan, implement, evaluate, and advocate for information services that embody a commitment to inclusion and dedication to underrepresented and marginalized users and communities.
5. Understand and apply research in library, archival, museum studies, information science, data science, and stewardship, as well as other disciplines.
6. Develop and advance the contribution of the information professions to society through advocacy, continuing education, and lifelong learning for information professionals and the communities they serve.

Revised and affirmed by the faculty of the Department of Information Culture and Data Stewardship in April 2018

Degree Requirements

With the possible exception of six credits of advanced standing, all course work must be completed in residence in the MLIS degree program (i.e., registering while matriculated as an SCI student) at the University of Pittsburgh.

The faculty may approve certain exceptions to the degree requirements outlined in the following sections. Approval for exceptions must be obtained PRIOR to enrollment in the course in question and must be documented through the Records Office. See the Advising section of the SCI Catalog for more details.

The MLIS degree is a 36-credit program that can be completed in three consecutive terms of full-time study or up to four years (twelve terms) of part-time study.

There is a series of mandatory core courses -- the remaining courses are tailored to your career goals or chosen area of interest. It is important to plan carefully, in consultation with your faculty advisor, to make the best use of the educational opportunities available.

Students will take the four required courses* for the MLIS degree. Students must earn a B or better in each core course.

- LIS 2000 - INFORMATION, DATA, AND SOCIETY (to be taken in the first term)
- LIS 2005 - KNOWLEDGE ORGANIZATION
- LIS 2600 - INTRODUCTION TO INFORMATION TECHNOLOGIES (to be taken in the first term)
- LIS 2700 - MANAGING AND LEADING INFORMATION SERVICES

*The pathways may have different core and required courses -- students should work with their advisors to ensure that they are following the proper course of study.

Students should know that a thesis is not a requirement of the MLIS degree.

Pathways

Students may elect a pathway on their application for admission. The student then follows a more stringent distribution of credits depending on their pathway.

Our three pathways have been developed in response to needs expressed by the profession. In addition to the core knowledge of librarianship, you'll gain specific skill sets pertinent to your career goals.

- Archives and Information Science
- Data Stewardship
- Library and Information Services

The following sections describe the pathways; the specific distribution of credits for the individual pathways are outlined on the student's Academic Advisement Report (AAR). For more details regarding this dynamically generated advising tool, see the Advising section of the SCI Catalog.

Students select their pathway on the application for admission and may change at any time. A form and instructions for changing specializations is available on the School's Current Students Web site.
Students who do not meet their chosen pathway's requirements for graduation will automatically be changed to the general MLIS track and certified for graduation against the general degree requirements.

The Archives and Information Science pathway is noted on the student's final transcripts as "Degree awarded in Master of Library and Information Science with a concentration in Archives and Information Science." No other pathways are detailed on official documents in this way.

Archives and Information Science

Recordkeeping, from governmental to organizational to personal, is one of the most ancient and essential human and institutional functions. Records are created and maintained for purposes of evidence; accountability; and personal, social and corporate memory. Archives serve a crucial cultural function, providing society with a sense of identity and memory. Records management programs help organizations to be compliant with regulatory agencies, responsible to constituent groups, and effective and efficient in the use of informational resources. Critical to the administration of records is the maintenance of records over long periods of time, traditionally called preservation and now being influenced by discussions concerning digital curation and stewardship.

Our Archives and Information Science program is one of the leading programs of its kind in the United States. You can earn your MLIS degree here, gaining an in-depth knowledge of records and recordkeeping systems; digital records management; archival appraisal and access; the history and evolution of recordkeeping systems; and digital preservation, curation, and stewardship.

Our program will give you the skills and knowledge to identify and analyze recordkeeping systems from legal, evidential, historical, and cultural perspectives. Students study in an engaging and intellectually stimulating environment, taking courses in diverse topics including:

- appraisal and records scheduling;
- organization and representation of unique materials;
- reference and access;
- advocacy and public programming;
- legal and ethical issues;
- preservation of library and archive collections;
- digitization, digital preservation, and digital curation;
- research methods for archival research; and
- management of archives, preservation, and records programs.

Data Stewardship

The Data Stewardship Pathway will provide an introduction to data curation, digital preservation, and data science. It will frame these topics within the broader context of data informatics, digital scholarship, research integrity, disciplinary diversity, and cultural change. In addition to setting the stage from a policy perspective, this Pathway will provide the practical skills needed to carry out effective research data management and preservation as well as situate these practices in the wider landscape of open science and open scholarship. This Pathway draws on data initiatives from across the globe including the United States, the United Kingdom, Europe and Australia. In each course, relevant case studies and exemplars will be provided to illustrate concepts and principles with tangible practice. It will equip graduate students with the necessary knowledge, skills, and competencies to work in a range of data stewardship roles found in libraries, archives, data centers, governments, industries, and businesses.

The foundational course on Data Stewardship examines traditional and emerging practices in areas such as research data management, data preservation, data infrastructures, information ethics, and more.

Library and Information Services

Information professionals are the human interface that connect people, information, and technology. They play a leadership role in the identification, organization, preservation, and effective use of information and cultural artifacts. The work of information professionals is essential to the public good because it supports equitable access to information for all and helps to ensure and informed society and vibrant democracy. While information professionals traditionally have worked in cultural heritage institutions such as libraries, their skills are now needed in all sectors of society. Now more than ever, the world needs highly qualified specialists in libraries and information services.
This pathway covers several areas of interest, each with their own set of suggested elective courses:

**Academic Libraries**

This area of interest is designed to provide you with the theoretical knowledge, contextual understanding, and practical skills to work effectively as a librarian or information professional in a higher education sector that is continually evolving. Our teaching is informed and inspired by personal experience, current research and leading thinking in the field. The courses will equip you for the challenges and demands of planning, managing and delivering resources and services in academic libraries, through exploration of their historical contexts, current positions, and future directions.

**Individualized**

Available to both the on-campus and online MLIS students, this area of interest will give you the practical skills and theoretical knowledge necessary to succeed as an information professional in a wide variety of positions.

**Information Technology**

This area of interest will enable graduates to assess, organize, and manage the various electronic systems that support library services. Faculty will explore the theoretical underpinnings of such systems as well as provide a thorough understanding of their functions. The program will emphasize database design and implementation, information architecture, and information visualization.

**Public Libraries**

Our teaching is informed and inspired by personal experience, current research and leading thinking in the field. The courses in the Public Libraries area of interest will equip you for the challenges and demands of planning, managing and delivering resources and services through exploration of their historical contexts, current positions, and future directions.

**Resources & Services: Children and Youth**

SCI acknowledges the changing landscape of children's and young adult librarianship. Without forgetting our important roots in children's literature, our school prepares information professionals who can reach out to the child of the 21st century.

**Resources & Services: Reference**

The Reference area of interest at SCI will provide students with working knowledge of a wide array of reference sources and services in areas such as government documents, social sciences, science and technology, law, health, and humanities. This course of study will enable you to analyze users' needs to determine what information is appropriate; to make useful judgments about the relevance, trustworthiness, and quality of sources; and to assess methods for delivering the desired information.

**School Library Certification Program**

The School Library Certification Program (SLCP) will allow you to earn both your MLIS degree and your Instructional I teaching certificate in Library Science, K-12, from the Pennsylvania Department of Education. You will gain the critical skills needed through competency-based learning experiences in collaboration with practitioners. You will be prepared to embark upon one of the most challenging and rewarding careers in the Library and Information Sciences field.

**Independent and Experiential Learning Opportunities**
This program is designed to provide you with both the theoretical knowledge and practical skills for managing and making decisions related to your chosen academic pathway. As part of your course of study, you can gain critical experience through a for-credit Field Experience or you may also register for an Independent Study which affords the opportunity to work on research projects and publications.

Students must have completed a minimum of twelve credit hours in good academic standing in order to register for the Field Experience.

Intelligent Systems Program

The Intelligent Systems Program (ISP) is a degree-granting program in the University of Pittsburgh's School of Computing and Information that enables graduate students to pursue diverse interdisciplinary studies in applied artificial intelligence. The scope of the program is broad, but encourages students to explore concentrations in specific areas, such as biomedical informatics, machine learning and decision making, intelligent tutoring systems and educational technology, natural language processing and information retrieval, AI and law, and social computing.

Many of Pitt's acclaimed schools are represented through our associated faculty, including the School of Medicine, the School of Law, the School of Education, the Dietrich School of Arts and Sciences, and the Swanson School of Engineering. There are especially strong connections to research groups in the Department of Computer Science, the Department of Informatics and Networked Systems, the Department of Biomedical Informatics, the Law School, and the Learning Research and Development Center.

The program offers Master of Science and Doctor of Philosophy degrees and an area of concentration in biomedical informatics.

Admissions Information

Briefly, an application consists of the standard School of Computing and Information admission form and supplemental materials. As well, applicants must include a concise statement of purpose, providing information on the following points:

- Objective in pursuing a PhD or MS in intelligent systems.
- Theoretical background in relevant areas.
- Background in relevant tools and applications, particularly programming languages, including your level of proficiency.
- Relevant practical experience, including industrial or commercial experience.

Applicants to the Biomedical Informatics track of the Intelligent Systems Program must specifically indicate their interest in this track on their application to the Intelligent Systems Program.

Financial Assistance

Students in the ISP program are funded through a variety of sources, including externally supported research and training grants, University fellowships, and program funds.

Policies for the Intelligent Systems Program

- When a new student arrives, the student is assigned space. As the student finds an advisor and starts working on projects, he/she usually moves to other labs designated for that faculty.
- The progress of all ISP students is reviewed and mailed to the students in the fall of every year.
- ISP students are eligible to apply for a limited amount of conference travel funds each year. To find out more, refer to the ISP Web page.
- Every ISP student is expected to maintain a website listing their current contact information, publications and current research. They are also responsible for ensuring that the website is linked from the ISP Student Directory.
- ISP students are required to attend all but two of the scheduled AI Forum talks per term and sign in so they get credit. Failure to meet this requirement will affect application for Andrew Mellon Fellowship candidacy, Dietrich School program funding candidacy, summer GSA funding, ISP Travel Grants and similar funding. In case of extenuating circumstances, the student should communicate the possible absence to the ISP director and administrator.
ISP students are required to complete the Research Integrity Module. "Upon completion of this activity, participants should be able to describe generally accepted practices and ethical principles associated with authorship and publication, generation and use of data, mentoring, research misconduct, and other investigator responsibilities". Once completed, the last page must be printed and submitted to the ISP administrator.

**Maintenance of a 3.0 GPA**

Each student must maintain a 3.0 Grade Point Average (GPA) for all credits of graduate level coursework for either degree. Failure to maintain a cumulative 3.0 GPA will result in the student being placed on academic probation. Students should refer to the Academic Standing and Dismissal section of the SCI Catalog page for full definitions and explanations of the academic standing review.

**Grades for Individual Courses**

Students must earn a grade of B- or better in each of the courses in the appropriate ISP curriculum (the General Intelligent Systems Track or the Biomedical Informatics Track).

**Transfer Credits**

Transfer credit limits are determined by the University while the process is managed at the School level. See the Transfer Credits section of the SCI Catalog page for details and forms. Note, the explicit approval of the student's advisor and of the ISP director are required. Students must provide all items outlined in the Transfer Credit Request Form in order for the request to be reviewed by the ISP Director.

**Substituting Other Courses at the University of Pittsburgh**

Course substitutions require approval of the student's advisor and the ISP director. To apply for a course substitution, a student should first obtain the approval of his or her advisor. Then, the student should submit the following information to the ISP director: (1) whether the class is a graduate or undergraduate class, (2) exactly which requirement the course is meant to satisfy, (3) an indication of approval by the student's advisor, (4) justification for the substitution, and (5) sufficient information about the course syllabus for the director to judge whether the substitution would be appropriate.

Course substitution must be documented and shared with the Records Office in order to expedite graduation certification review.

**Intelligent Systems, PhD**

**Requirements for the PhD**

The student's adviser must be a member of the ISP faculty. Note that each new student is initially assigned an administrative adviser. A student's administrative adviser will not necessarily be the student's MS or PhD adviser.

To obtain a degree, a student must also be in good standing and at full student status (not provisional). To remain in good standing, a student must make sufficient progress on their degree requirements, and also attend all but two (2) of the scheduled AI Forum talks per term and sign in so they get credit. Failure to meet this requirement will affect application for various fellowship candidacies, GSA funding, travel grants and similar funding. In case of extenuating circumstances, the student should communicate the possible absence to the ISP director and administrator.

**Course Requirements**

Prerequisites: Students are expected to have the undergraduate prerequisites needed to take the graduate courses required by the ISP. These may be required if not taken.
General Intelligent Systems Track Curriculum:

First-year students

- ISSP 2020 - TOPICS IN INTELLIGENT SYSTEMS
- INFSCI 3005 - INTRODUCTION TO THE DOCTORAL PROGRAM
- ISSP 2030 - ADVANCED TOPICS IN INTELLIGENT SYSTEMS

Core

- ISSP 2160 - FOUNDTNS OF ARTIFICIAL INTELLGNC / CS 2710 - FOUNDTNS OF ARTIFICIAL INTELLGNC
- AND Choose Two of the Following:
- ISSP 2170 - MACHINE LEARNING / CS 2750 - MACHINE LEARNING
- ISSP 2230 - INTRO NATURAL LANGUAGE PROCSSNG / CS 2731 - INTRO NATURAL LANGUAGE PROCSSNG
- ISSP 2180 - COMPUTER VISION / CS 2770 - COMPUTER VISION

Theory

Applied or mathematical statistics. Choose one of the following:

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- BIOINF 2118 - STATISTICAL FOUNDATIONS OF BIOMEDICAL INFORMATICS
- STAT 2131 - APPLIED STATISTICAL METHODS 1
- STAT 2132 - APPLIED STATISTICAL METHODS 2

Theory of computation, algorithms. Choose one of the following:

- CS 2110 - THEORY OF COMPUTATION
- CS 2150 - DESIGN & ANALYSIS OF ALGORITHMS

One additional course required. Any of the theory courses listed above are acceptable.

Advanced courses

- Four ISSP advanced lecture courses, numbered 2000 or higher and approved by the PhD adviser.

Biomedical Informatics Track Curriculum (ISP/MI)

This assumes that a student already has training in a health care field; if this is not so, then the faculty will select a set of courses that teach the student basic medical knowledge, and the student may take these courses as electives.

First-year students

- ISSP 2020 - TOPICS IN INTELLIGENT SYSTEMS
- INFSCI 3005 - INTRODUCTION TO THE DOCTORAL PROGRAM
ISSP 2030 - ADVANCED TOPICS IN INTELLIGENT SYSTEMS

Core

- ISSP 2083 - BIOMDCL INFORMATICS JOURNAL CLUB / BIOINF 2032 - BIOMEDICAL INFORMATICS JOURNAL CLUB
- ISSP 2015 - FOUNDATIONS OF CLINICAL AND PUBLIC HEALTH INFORMATICS / BIOINF 2011 - FOUNDATIONS OF CLINICAL AND PUBLIC HEALTH INFORMATICS
- ISSP 2160 - FOUNDATIONS OF ARTIFICIAL INTELLIGENCE / CS 2710 - FOUNDATIONS OF ARTIFICIAL INTELLIGENCE

Then choose;

One of the following:

- ISSP 2170 - MACHINE LEARNING / CS 2750 - MACHINE LEARNING
- ISSP 2230 - INTRO NATURAL LANGUAGE PROCESSING / CS 2731 - INTRO NATURAL LANGUAGE PROCESSING
- ISSP 2180 - COMPUTER VISION / CS 2770 - COMPUTER VISION

AND choose one of the following:

- CS 1510 - ALGORITHM DESIGN
- CS 2150 - DESIGN & ANALYSIS OF ALGORITHMS
- CS 3150 - ADVANCED DESIGN & ANALYSIS OF ALGORITHMS

AND choose one of the following:

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- BIOINF 2118 - STATISTICAL FOUNDATIONS OF BIOMEDICAL INFORMATICS
- STAT 2131 - APPLIED STATISTICAL METHODS 1
- STAT 2132 - APPLIED STATISTICAL METHODS 2

AND choose two of the following:

- ISSP 2070 - PROBABILISTIC METHODS / BIOINF 2101 - PROBABILISTIC METHODS
- ISSP 2081 - FOUNDATIONS OF BIOINFORMATICS
- ISSP 2240 - DECISION ANALYSIS AND DECISION SUPPORT SYSTEMS / INFSCI 2130 - DECISION ANALYSIS AND DECISION SUPPORT SYSTEMS
- BIOINF 2017 - CLINICAL RESEARCH INFORMATICS
- BIOINF 2121 - HUMAN-COMPUTER INTERACTION AND EVALUATION METHODS
- BIOINF 2117 - APPLIED CLINICAL INFORMATICS
- BIOINF 2016 - FOUNDATIONS OF TRANSLATIONAL INFORMATICS
- BIOINF 2124 - PRINCIPLES OF GLOBAL HEALTH INFORMATICS

Advanced courses

3 Graduate-level Courses (2000 or higher, 3 credits or more) ISSP lecture course that has your adviser's approval as being relevant to your studies in the ISP required.

TA

TA any biomedical informatics (BIOINF) course that is cross listed as an ISSP course.
MS Project and PhD Preliminary Evaluation

For this requirement, the student must complete a research project, approved by the student's preliminary evaluation committee, involving (1) significant research, design, or development work, (2) a written report, and (3) an oral presentation. Students must form a MS project committee (MS) or a preliminary evaluation committee (PhD) consisting of three faculty members, two of whom must be ISP faculty. The student's adviser chairs the committee, and must be an ISP faculty member.

Preferably, the research project is completed by the end of the summer term of the second year. Students who have not defended their research project by end of the fall term of their third year in the program will be placed on provisional status in the program, unless extenuating circumstances warrant an extension, as judged by the student's preliminary evaluation committee.

Although not a requirement, it is strongly suggested that the student submit the project report for publication in a refereed journal or conference. Thus, the scope of the research project is intended to be at the level of a paper that is of publishable quality in a peer-reviewed AI journal or conference.

The steps to completing the project are as follows:

- Submit a project proposal to your committee for its approval.
- Perform the work, and write a project report.
- Submit your project report to your committee at least two weeks in advance of your oral presentation of the work.
- Present your work in a talk given to your committee. As a guideline, you should give about a 30-minute talk and leave about 30 minutes for questions and discussion. The ISP faculty should be invited to the oral presentation. General questions relating to the field of AI are appropriate at this examination. The oral presentation may take place in an open forum, such as the ISP AI Forum, followed by a closed session with just your committee and any other ISP faculty members who wish to be present.

The committee will evaluate the project and presentation. The following criteria should be considered: The project and presentation should represent independent research, design, or development work; they should be technically sound; and they should be relevant to the ISP. Also, the student should display breadth of knowledge, understanding of the significance and motivation of the work, and understanding of the relationship of the work with prior work; and, the presentation should be clear. The committee will combine that evaluation with an evaluation of the student's progress in coursework to arrive at an overall evaluation of one of the following:

- Pass at the PhD level.
- Provisional pass at the PhD level: Must complete additional requirements specified by the committee in order to obtain a pass.
- Pass at the MS level: Student obtains a terminal MS degree, once all course requirements for the MS are completed.
- Fail.

Students who pass will need a card signed by their committee to obtain credit for passing. Contact the ISP program secretary at least two weeks before the oral portion of the preliminary evaluation, so the card can be available at the meeting to be signed.

PhD Comprehensive Examination

For the PhD comprehensive examination, students should follow these steps:

Form a comprehensive examination committee consisting of at least three faculty members, two of whom must be ISP faculty. The student's PhD adviser chairs the committee and must be an ISP faculty member. The faculty on a given student's comprehensive examination committee are often the same as the faculty on that student's preliminary evaluation committee, but they need not be.

Choose three major subareas of AI. One of these areas is flexible; the other two should be chosen from the ISP list of sub-areas below. The flexible area must be unanimously approved by the students' committee (but does not need to be approved by the director). Biomedical Informatics students should choose "Biomedical Informatics" as one of the subareas.

- AI and Business/Accounting
- AI and Law
- AI and Medicine
- AI and MIS
Work with the committee to finalize the reading for the three chosen subareas. Have the committee approve the list.

Work with your committee members (or their designated administrative assistants) to set the following dates for the examination:

- The date and time the written examination is distributed to you.
- The date and time you return the examination, which by default is nine days after receiving it. Your committee can designate an examination period of fewer or more than nine days, and through your adviser you may request that they do so.
- The date and time you orally defend your examination answers before your committee. You should schedule two hours for your oral exam defense, although typically less time will be needed.

Your committee will provide a list of written questions. Unless an exception is made by your committee, you will have nine days to provide the written answers to these questions. At the end of those nine days, you should distribute your answers to each of your committee members. Be sure to check that each has received your answers.

An oral examination will take place after the comprehensive committee has read your answers; the committee should be given a minimum of three days to read your answers before the oral examination. The ISP faculty (only) will be invited. You will be asked questions by your committee about your answers on the written examination, and more broadly, about your knowledge of the material in the three areas of concentration you have chosen.

At the end of your oral examination, your committee will evaluate your performance as one of the following:

- Pass.
- Provisional pass: Must complete additional requirements specified by the committee in order to obtain a pass.
- Fail.

An evaluation by the comprehensive examination committee of "fail" will be considered by the ISP faculty at large, who will make a determination about the status of the student in the ISP, including whether the student is allowed to re-take the examination or whether he or she is terminated from the program.

Students who pass the comprehensive examination will need a card signed by their committee to obtain credit for passing. Contact the ISP program secretary at least two weeks before the oral portion of the comprehensive examination, so the card can be available at the meeting to be signed.

**PhD Dissertation**

In pursuing the PhD dissertation, students should follow these steps:

Find a dissertation adviser and form a dissertation committee. The composition requirements for the Doctoral dissertation committees is detailed in SCI Catalog page; see the Doctoral Committee section for details.
Write a dissertation proposal. Present the proposal to your committee. Your committee must approve your proposal. You will need a form signed by your committee and the ISP director to complete this process. Contact the program administrator at least two weeks before meeting so the form can be available for signature at the meeting.

Carry out the research. Write the dissertation.

Announcement of your dissertation defense must appear in University Times and Pitt Chronicle. Send information to the ISP administrator at least five weeks before your oral defense date. This information will be sent to the University Times and Pitt Chronicle. The announcement includes the student name, the title of the dissertation, and the time and place of the defense.

Have an oral defense which is open to the University at large. You will need a card signed by your committee to obtain credit for passing the dissertation requirement. Contact the program secretary two weeks before your defense, so the card can be available for signature at the meeting.

Credit for doctoral research is ordinarily obtained through the course ISSP 3000 - RESEARCH AND DISSERTATION PHD. Students who have completed all course requirements, passed the PhD comprehensive examination, completed 72 credits of graduate student, and are working fulltime on their dissertations are encouraged to register for FTDJ 0000 - FULL-TIME DISSERTATION STUDY.

Intelligent Systems, MS

Requirements for the Master's Degree

Students pursuing the Master of Science degree in ISP must adhere to the SCI requirements for graduation and complete a minimum of 30 credits as outlined below, as well as a MS Project.

General Intelligent Systems Track Curriculum:

First-year students are encouraged but not required to take:

- ISSP 2020 - TOPICS IN INTELLIGENT SYSTEMS
- INFSCI 3005 - INTRODUCTION TO THE DOCTORAL PROGRAM
- ISSP 2030 - ADVANCED TOPICS IN INTELLIGENT SYSTEMS

Core

- ISSP 2160 - FONUDTNS OF ARTIFICIAL INTELLGNC
AND Choose Two of the Following:

- ISSP 2170 - MACHINE LEARNING / CS 2750 - MACHINE LEARNING
- ISSP 2230 - INTRO NATURAL LANGUAGE PROCSSNG / CS 2731 - INTRO NATURAL LANGUAGE PROCSSNG
- ISSP 2180 - COMPUTER VISION / CS 2770 - COMPUTER VISION

Theory

Applied or mathematical statistics. Choose one of the following:

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- BIOINF 2131 - PRACTICUM IN ADV BIOMEDICAL IT
- STAT 2131 - APPLIED STATISTICAL METHODS 1
STAT 2132 - APPLIED STATISTICAL METHODS 2
Theory of computation, algorithms. Choose one of the following:

• CS 2110 - THEORY OF COMPUTATION
• CS 2150 - DESIGN & ANALYSIS OF ALGORITHMS

One additional course required. Any of the theory courses listed above are acceptable.

Advanced courses

Four ISSP advanced lecture courses, numbered 2000 or higher and approved by the PhD adviser.

MS Project

For this requirement, the student must complete a research project, approved by the student's preliminary evaluation committee, involving (1) significant research, design, or development work, (2) a written report, and (3) an oral presentation. Students must form a MS project committee (MS) or a preliminary evaluation committee (PhD) consisting of three faculty members, two of whom must be ISP faculty. The student's adviser chairs the committee, and must be an ISP faculty member.

Preferably, the research project is completed by the end of the summer term of the second year. Students who have not defended their research project by end of the fall term of their third year in the program will be placed on provisional status in the program, unless extenuating circumstances warrant an extension, as judged by the student's preliminary evaluation committee.

Although not a requirement, it is strongly suggested that the student submit the project report for publication in a refereed journal or conference. Thus, the scope of the research project is intended to be at the level of a paper that is of publishable quality in a peer-reviewed AI journal or conference.

The steps to completing the project are as follows:

• Submit a project proposal to your committee for its approval.
• Perform the work, and write a project report.
• Submit your project report to your committee at least two weeks in advance of your oral presentation of the work.
• Present your work in a talk given to your committee. As a guideline, you should give about a 30-minute talk and leave about 30 minutes for questions and discussion. The ISP faculty should be invited to the oral presentation. General questions relating to the field of AI are appropriate at this examination. The oral presentation may take place in an open forum, such as the ISP AI Forum, followed by a closed session with just your committee and any other ISP faculty members who wish to be present.

The committee will evaluate the project and presentation. The following criteria should be considered: The project and presentation should represent independent research, design, or development work; they should be technically sound; and they should be relevant to the ISP. Also, the student should display breadth of knowledge, understanding of the significance and motivation of the work, and understanding of the relationship of the work with prior work; and, the presentation should be clear.

The committee will combine that evaluation with an evaluation of the student's progress in coursework to arrive at an overall evaluation of one of the following:

• Pass at the PhD level.
• Provisional pass at the PhD level: Must complete additional requirements specified by the committee in order to obtain a pass.
• Pass at the MS level: Student obtains a terminal MS degree, once all course requirements for the MS are completed.
• Fail.

See the ISP PhD Catalog page for further details about doctoral degree requirements.

The School of Computing and Information

Grand-parenting and the new School of Computing and Information
Computer Science (CS) graduate students who matriculated into the University of Pittsburgh PRIOR to Fall 2017 received a communication allowing a choice to either remain in the School of Arts & Sciences or transfer to the new School of Computing and Information for completion of their CS degree.

- If a student chose to remain in the School of Arts & Sciences, they should refer to the Arts & Sciences catalog for the regulations, policies, and requirements for their degree.
- If a student applied to transfer to the School of Computing and Information, they should refer to the new school's catalog for the regulations, policies, and requirements for their degree.

Note: If a student took no action in response to the grand-parenting e-mail, they will remain in the School of Arts & Sciences by default.

Any student matriculating into the University of Pittsburgh AFTER Fall 2017, must apply to the School of Computing and Information in order to pursue an undergraduate degree in either Computer Science or Information Science and should refer to this School's catalog for information.

If you have additional questions or concerns, please contact the School's Office of Student Services at SCIreg@pitt.edu.

Admissions Requirements and Procedures

General guidelines for applying to a graduate program at the University of Pittsburgh should be reviewed prior to submitting an application for admission. These guidelines are available on the University's Application for Admission Catalog page.

The School of Computing and Information seeks students with diverse interests and abilities for its graduate degree and certification programs. All applicants will be judged on their own merits. Applicants for Master's study must have earned a Bachelor's degree from an accredited college or university with a scholastic average of B (3.0 on a 4.0 scale) or better; the doctoral programs have more stringent requirements. For those who have been in the workforce, admission will be based upon academic achievement, area of study, career orientation, and work experience.

Apply Online: Applications for graduate study must be completed and submitted entirely online. Applicants must set up a free account with the ApplyYourself Application Network, which enables you to work on your application over several sessions. Your information is transmitted through a secured server and is kept private until you submit your application. After submission, your application materials will be managed confidentially within the review process.

Individual programs require supplemental application materials, and some programs require prerequisite coursework and skills knowledge. More details regarding expectations for statement of intent or writing portfolios, pre-requisite courses, and other supplemental application materials can be found on the individual program pages (through the appropriate program).

Admissions Status: Students are admitted to a graduate program and granted one of the following three types of status: Full graduate, Provisional graduate or Special graduate.

1. Full graduate status: when all admission requirements are met; for full details, see Admissions Status in the Regulations Governing Graduate Study at the University of Pittsburgh.

2. Provisional graduate status: when some admission requirements are not (or inadequately) met; Applicants who are graduates of a recognized college or university but who do not qualify for admission to full graduate status because of deficiencies in either appropriate background courses or their scholastic achievement may be considered for provisional graduate status if strong supporting evidence of their ability to complete a graduate program is provided. Courses taken to remove deficiencies do not contribute toward completion of graduate degree requirements. Transfer from provisional to full graduate status is initiated by the student and recommended by the department or program, and is possible only after removal of deficiencies and other conditions noted at the time of admission and satisfactory progress in graduate work.

Students at the School of Computing and Information are expected to complete a Provisional Condition Review form in order to have their status reviewed upon completion of provisions/removal of deficiencies. Students are notified by e-mail when they have reached full graduate status and may request a new admissions letter at that time.

3. Special graduate status: to take specific graduate-level courses for one or more terms without the intent of earning a degree or certificate.

A special status student who takes courses while not seeking an advanced degree may transfer up to 12 credits taken while on special status to a degree program if the student is subsequently admitted into one, and if the department recommends the transfer. A course transferred from special status to full graduate status must carry a grade of B or better.
Application Processing: Begin the online application process at www.sci.pitt.edu.

Your application will be available for review by the department or program once all the recommendation letters are submitted and all test results and transcripts are uploaded.

Applications are reviewed after receipt of all required documents. Please note that, during the December-January timeframe, numerous applications are received. Due to the volume of submissions, there may be a delay in confirmation of receipt of materials.

Applicants are encouraged to check their online application account to ascertain if documentation has been received or if an admissions decision has been made PRIOR to contacting the School for such details. Note, the status of your application, related documents and admission decision cannot be verified until you have submitted the application fee (which is the final step in submitting your application).

Applicants are notified via e-mail when an admissions decision has been posted to the online application system.

The University of Pittsburgh participates in the Council of Graduate Schools' (CGS) "Resolution Regarding Graduate Scholars, Fellows, Trainees and Assistantships" also known as the "April 15 Resolution." Participation in the resolution allows admitted graduate students to consider all offers of financial support through April 15. In turn, the resolution binds students to their decisions made or held in place after April 15. SCI's cooperation ensures that both students and programs conduct their admissions in an ethical manner, and that they receive equal treatment and consideration in the financial support decision-making process. Further details regarding the "April 15 Resolution," including a list of participating institutions, can be found on the CGS Web site.

Deadlines for US Citizens and Permanent Residents: see the individual degree or program pages for application deadlines. Note, SCI processes applications on a rolling basis. However, priority consideration will be given to applications received by these deadlines.

Deadlines for International Students: Due to delays in the issuance of visas it is recommended that international students apply as early as possible, preferably at least six months prior to the start of the term of admittance, so that paperwork can be processed in a timely manner.

Deadlines for international students' applications to the School of Computing and Information are:

<table>
<thead>
<tr>
<th>Term of Admission</th>
<th>Application Deadline</th>
<th>Deadline by which you must accept your offer of admission in order for your visa to be processed</th>
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<tbody>
<tr>
<td>Fall</td>
<td>January 15</td>
<td>Between April 15 and June 15</td>
</tr>
<tr>
<td>Spring</td>
<td>June 15</td>
<td>November 1</td>
</tr>
<tr>
<td>Summer</td>
<td>December 15</td>
<td>March 1</td>
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Admission of International Students: Non-US Citizens must read through the International Graduate Student Admission section of the University's Application for Admission page for a complete overview of University admissions requirements, including TOEFL or IELTS scores, for students from other countries.

English Language Proficiency Requirements: Graduate students must possess sufficient knowledge of English to study without being hindered by language problems, to understand lectures, and to participate successfully in class discussion. International applicants must submit either the TOEFL or the IELTS (taken within two years of the date of application).

Applicants must contact Educational Testing Services directly to request that an official score report be sent to the School of Computing and Information. The institution code for the University of Pittsburgh is 2927. Submission of TOEFL test results is required for admission to graduate study in this School. Individual degree programs may have varying minimum requirements, which are outlined on each program's Catalog page. Applicants who are citizens of a country where English is the official language are exempt from submitting the results of the TOEFL or IELTS. In addition, applicants who have earned a Bachelor's degree or higher degree from a regionally accredited institution in the U.S. are also exempt from submitting the results of the TOEFL or IELTS. However, the School reserves the right to ask for TOEFL scores if deemed necessary for the evaluation of the application. Please note: degrees where anything less than the entire degree was completed in-residence within the English-speaking country will be reviewed on a case-by-case basis. Students in these circumstances may be required to complete the TOEFL or IELTS with the required minimum score upon review.

Prior to registration, students with TOEFL scores less than 100 (Internet-based) will be given the on-campus administered English Language Proficiency Test.
Students may choose to take the International English Language Testing System exam (IELTS) in place of the TOEFL. Students must receive a score of Band 6.5. Students who do not achieve a score of Band 7.0 score or better will be given the on-campus administered English Language Proficiency Test.

If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first academic year of study; some programs may require students to follow a shorter completion timeline for remedial courses.

**Deferred Admissions:** Admission to graduate study is valid for the academic year. A student may defer admission for up to one year without reapplication. The student must submit a deferral request through the online application system. Additional course work taken during the deferred year and a new affidavit of financial support should also accompany any financial aid request. Approval of a student's request to defer admission does not necessarily mean that any financial aid awarded is also deferred - the offer of financial aid will be reassessed for the student's deferred admit term.

**Reinstatement:** Students who have left the University for one calendar year or more (whether of their own volition or as a result of a suspension), who did not complete work at another institution, and who wish to continue their studies must apply for reinstatement through the School's online application system; exceptions noted in the Leave of Absence (LOA), Readmission, and Reinstatement section.

**Readmission:** Students who previously attended the University of Pittsburgh before attending another institution and who wish to return to the University are considered transfer students and must reapply following the guidelines for transfer students. Former students who have enrolled in other institutions may apply for readmission with advanced standing. Such students should submit a new application to their graduate degree program via the School's online application system. All supporting materials must be submitted; revision of essays is suggested. Inclusion of all transcripts - including new coursework completed during the period of leave - are required.

For more details regarding the different definitions and regulations for readmitted and reinstated students, see the Leave of Absence (LOA), Readmission, and Reinstatement section of the SCI Catalog page.

**Transferring Between SCI Departments or Programs** Students may transfer to a different department or program within SCI. Transfers between SCI departments or programs will be reviewed by the receiving department's admissions committee - including a thorough assessment of the student's academic performance in previous institutions as well as within SCI. Faculty will review the student's original application materials and may require that the student submit supplemental application materials.

To initiate a transfer between SCI Departments or Programs, a student must submit the Graduate Academic Plan Change Form at least one month prior to the start of the new admission term. If a University break occurs during that time, students should allot for additional time for their transfer to be evaluated by the department's admissions committee and their official student record to be processed.

Students should note that transfer to a different department or degree is not guaranteed.

### Appointments and Financial Information

**Teaching and Research Appointments**

Financial assistance for graduate students is provided in the form of teaching and research appointments, fellowships, traineeships, tuition scholarships, and loans. Application for financial aid should be made on the Application for Admission to Graduate Study. All applications for financial assistance are reviewed at the departmental or program level and awards are made to the extent of available funds. Admission to graduate study does not carry any implications concerning the award of financial aid. Only students with full graduate status are eligible for teaching assistantships and fellowships.

In recognition of academic merit, the University offers teaching assistants (TA), teaching fellows (TF), graduate student assistants (GSA), and graduate student researchers (GSR) full or proportional tuition scholarships, and students are required to register for the number of credits proportional to appointment. If appointed in the summer term, students should register for a minimum of 3 credits (or full-time dissertation study, if eligible), unless additional registration is needed for academic purposes.

Policies governing TA/TF/GSA/GSR positions can be found on the Provost's Guidelines and Resources page.

**Tuition Fees and Billing**

The University updates the Tuition, Fees, and Billing page in July for the upcoming academic year.
Academic Regulations and Standards

**University Registration Policies:** Policies on full-time/part-time status, adding and dropping courses, cross-registration, grading systems, etc. are governed by the University at large. Students should refer to the University's Academic Regulations for general information and contact the SCI Records Office for more details on applying these policies in practice.

Highlighted are frequent topics of inquiry: Satisfactory/No Credit, Registration (Enrollment), Cross-Registration, Withdrawing or Resigning, Grading and Records, Academic Record and Grade Reports

In addition to those University-wide regulations and standards detailed in the section on General Academic Regulations, each student in the School of Computing and Information is expected to be familiar with the following School-specific regulations and academic standards.

**Grading Policies**

Courses for which a G, I, N, R, or W grade is recorded and courses numbered below 1000 (0-0999) do not contribute either credits or grade points toward graduation. Courses numbered below 2000 only contribute credits or grade points toward graduation when approved by the department or program PRIOR to enrollment.

Students must achieve the minimum GPA, in no case less than 3.00, and individual course grade minimums established by their department or program in order to be eligible to retain teaching assistantships or fellowships, to undergo the preliminary evaluations, to take comprehensive examinations, to be admitted to candidacy for the PhD degree, and to graduate. No grade lower than a C will be counted toward graduation requirements; yet all letter grades will be calculated into the student's cumulative GPA unless if a class is repeated and a course repeat form processed. See "Repetition of Courses" section for more information.

**Auditing Courses and Selecting a Grading Option**

With the consent of the school and instructor, students may choose to audit a course or complete it with a Satisfactory/No Credit (S/NC) option. Regulations for S/NC credit allowances are governed by the Departments and are subject to the grade options allowed for each particular course (i.e., not all courses may be taken as S/NC). To audit a course, a student must register and pay tuition for the course. The audit grade (N) is not counted toward graduation or the GPA.

Graduate students choose a grading option (letter grade or S/NC) during enrollment from those listed within the University's Student enrollment system. Any decision to change the grading option after a class has been added to the student's enrollment must be processed no later than one week after the end of the Add/Drop period. The University's Office of the Registrar does not require submission of a Grade Option/Audit Request form for graduate courses. However, the SCI Records Office does require this documentation for course auditing.

The default is for all classes to be graded with a letter grade (unless otherwise stipulated by the Course Catalog) and decisions to select an alternative grading option (S/NC or Audit) should be discussed with the student's advisor. After a grading option has been selected and documented, this decision may not be changed.

**Grade Changes**

Grade changes are submitted by the course instructor. Grades will not be changed more than one year after the term's end nor if a student's record has become inactive or if a student has graduated.

**Incomplete (G or I) Grades**

The G grade signifies unfinished course work due to extenuating personal circumstances. Students assigned G grades are required to complete course requirements no later than one year after the term in which the course was taken. After the deadline has passed, the G grade will automatically be replaced by "NG" or "no grade" and will remain on the record. The student will be required to reregister for the course if it is needed to fulfill requirements for graduation.

The I grade signifies incomplete course work due to nature of the course, clinical work, or incomplete research work in individual guidance courses or seminars.

If an instructor is to assign an incomplete grade, the student and instructor must come to an agreement regarding the expected timeline of completion, grading, etc. The Records Office can provide assistance in documenting and enforcing this agreement through the "Incomplete Grade Contract."
Repetition of Courses

Required courses for a major must be repeated or replaced by a comparable course if a grade does not meet the degree's minimum requirements (see Department or program page for specifics). Course repetitions are subject to further regulations:

- Students typically only repeat a course in which the grade of C- or lower has been earned, however, upon department or program approval the student may repeat a course in which they have earned a B- or lower.
- A student may not enroll in the same course at another institution and have that grade replace the original grade earned at the University.
- The original course and grade remain on the transcript; however, the grade and credits originally earned are not counted in the calculation of the GPA.
- The grade earned by repeating a course is used instead of the grade originally earned. W, R, or N grades reported for the repeated course will not be identified as a course repeat, and therefore the original grade earned will continue to be counted in the GPA. Incomplete grades (G and I) are not identified as repeated courses until the course work is completed.
- Students are only permitted to repeat a course up to two times. Programs may have stricter course repeat policies.
- Any grade earned in the repeated course will be recorded on the academic transcript and calculated in the GPA, even if it is lower than the original grade.

The School automatically submits a course repeat form for students, however it is the responsibility of the student to ensure their repeat course grades have been updated with the "Repeated - Excluded from GPA" flag on their academic record and that all credits have been calculated correctly. Students should discuss repeat courses with their advisor at the beginning and end of the term of enrollment.

Credit & Enrollment Policies

Pre-requisite courses, and any coursework required to prepare for pre-requisite courses, are not calculated in the total credits required to earn a degree. For a list of pre-requisite courses for a degree and/or a degree specialization, refer to the individual degree Catalog pages.

Students who have completed graduate courses in degree-granting graduate programs at other appropriately accredited institutions prior to admission to the University of Pittsburgh and who would like to request a transfer of credits should submit official transcripts from those institutions in addition to the School's Transfer Credit Request form so that the courses can be evaluated for transfer credit.

Transfer Credit Requests are reviewed and approved by the department or program faculty before the form is submitted to the Records Office. As with all School forms, this can be found on the School's Current Students > School forms webpage.

Requests must adhere to the University's limitations for transfer credits. See the University's Academic Regulations for details.

The quality of education that graduate students receive is greatly enhanced with good academic advising at all stages of their program. Given the diversity of these needs, each program must determine the best way to provide these services. Academic advising provides the foundation upon which students plan their studies. It is the policy of the School for each student to have an academic advisor whose responsibilities include providing guidance in developing the student's career goals and academic programs, approving course selections, and advising as needed on issues affecting the student's academic and professional careers. Students are matched with an advisor upon admission; they may, however, change advisors at any time.

A student's assigned advisor can be viewed in the Student Center via my.pitt.edu. The goal of academic advising is to develop a consistent academic program coordinated to meet general program requirements and specific needs of individual students. Ideally, the student and faculty advisor function as a team working toward the objective of career preparation by means of the strongest possible academic experiences for the student. Students should meet each term with their advisors to ensure timely progress through their program.

All departments and programs are responsible, with Dean's Office oversight, for implementing policies and practices consistent with the University's in Elements of Good Academic Advising. Unresolved problems relating to the advising of graduate students at the department or program level should first be addressed with the Chair of the department or program.

Note regarding Graduate Faculty advisors and enrollment: Advising holds/service indicators, permission numbers, withdrawals, and questions regarding the mechanics of enrollment should be referred to the Records Office via SCIreg@pitt.edu. Course selection, research development and interests, and curriculum-based inquiries should be vetted through the student's advisor.

Exemptions to enrollment policies and degree requirements are approved by the department or program and are mediated through the student's advisor. Exemptions are then relayed to the Records Office, via various forms (see School Forms) for inclusion in the student's academic record.

Tracking your degree progress: In order for students to verify that they are making progress toward graduation, they should meet regularly with their academic advisor and review their progress and plans for future study.
In addition, Master's students should make use of the academic advisement report (AAR) as a self-advising tool. This report is submitted with the graduation application as a contract between the School and the student. The AAR provides detailed course options for fulfilling all requirements for the degree. When using the AAR online, students have quick access to schedule details for approved courses and links to enrollment. It is recommended that students continually monitor their AAR and utilize this tool frequently for enrollment and advisement purposes.

If a student finds errors in their AAR, they should speak to their advisor and request updates to their AAR. Requests for updates include "Best Fit" changes (re-directing courses to the appropriate requirement area), authorized student exemptions (exemptions pre-approved by the Program Director and/or the Dean's Office), and corrections to transfer credits. See the School's Current Students site for related forms (School Forms).

Informational videos and documents related to the AAR can be found on the Registrar's Student Training website. Detailed advising information is available on the program offering pages.

The purpose of the statute of limitations is to ensure that a graduate degree from the University of Pittsburgh represents mastery of current knowledge in the field of study. Individual schools within the University may adopt policies that are more stringent than the University policies. Variations and additions to those rules within the School of Computing and Information are as follows:

All requirements for master's degrees must be completed within a period of four consecutive calendar years from the student's initial registration for graduate study. Dual degrees and joint degrees that require course work in excess of 50 credit hours may be granted a longer statute of limitations by the University Council on Graduate Study.

From the student's initial registration for graduate study, all requirements for the PhD degree must be completed within a period of 10 years, or within eight years if the student has received credit for a Master's degree appropriate to the field of study. Some departments may have a more stringent statute of limitations for completion of Master's or Doctoral degrees. See the program offerings for specific details.

Under exceptional circumstances, a candidate for an advanced degree may apply for an extension of the statute of limitations. Requests for an extension must state the reason for the delay, provide evidence of continuing progress toward the completion of the degree, and include a detailed plan of study and proposed date for completion. The request must be approved by the chair of the student's Doctoral or Master's committee (if applicable) and the department or program chair or director of graduate studies, and be submitted to the Dean's Office for final action.

**Leave of absence (LOA), Readmission, and Reinstatement:** Graduate students may be granted a leave of absence under special conditions. Students who have resigned without requesting a leave of absence or have been away from the University for one or more years must apply for readmission or reinstatement. By University definitions, readmitted students previously attended the University of Pittsburgh and then enrolled at another external institution. Reinstated students previously attended the University of Pittsburgh and left for one or more calendar years, not attending external institutions in the meantime. These terms are attached to specific graduation requirements. All students interested in readmission or reinstatement must submit an application except for those on an approved leave of absence (see Special Admissions section for details).

Readmitted students follow the School and degree graduation requirements and rules based upon their term of readmission. Their statute of limitations is reset to their term of readmission and their transfer credits, advanced standing, and previously authorized exemptions will be reevaluated at the point of readmission.

Reinstated students follow the School and degree requirements and rules based upon their original term of entry to the School. Their statute of limitations is calculated against their original term of entry to the University and their transfer credits, advanced standing, and previously authorized exemptions will be accepted as previously approved at the point of reinstatement.

Exceptions to the reinstatement rules include:

- Students whose leave exceeds two years. All students who have been away from the University more than two years will be subject to the requirements of the School and of their major and/or certificate programs at the time of their reinstatement, rather than those in place at the time of their last attendance.
- Students on an approved leave of absence. Under special conditions, graduate students may be granted one leave of absence. A maximum leave of two years may be granted to Doctoral students or one year to Master's students. The length and rationale for the leave of absence must be stated in advance, submitted via the School's Leave of Absence Request form (found on the Current Students > School Forms webpage), recommended by the Department or Program, and approved by the Dean's Office.

If granted approval by the Dean's Office, a student is ensured that the time of the leave shall not count against the degree's statute of limitations, the student's transfer credits and previously authorized exemptions will be accepted as previously approved. If a student petitioned the faculty and
received permission to enroll in an external institution during their LOA for transfer credit in advance of their LOA, the credits may still transfer upon the student's return.

Students who have an approved LOA do not have to apply for readmission nor reinstatement. Instead, instructions for returning to the School will be shared with the student in the letter sent approving their leave.

A note on advising appointments and a returning from a break in continuous enrollment:

Since registration open enrollment begins in the twelfth week of the preceding term, applications for reinstatement should be received prior to that period so that the student's application can be reviewed and their record updated. Similarly, students who are returning from a LOA should keep this timeline in mind for setting up an appointment with their advisor and/or notifying the Records Office of their return to studies. Only after a student on an approved LOA has notified the Records Office will their enrollment service indicator (registration hold) be released from their record.

Regardless of the conditions surrounding a student's leave - e.g., an intentional leave of absence, suspension, or an extended lapse in enrollment requiring reinstatement - when a student returns, they return in the standing attached to their record (good, warning, or probation) at the term of their departure.

**Academic Integrity**

Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures.

**Academic Standing and Dismissal**

Academic standing is maintained and monitored each term by the Dean's office in conjunction with the School's various departments and programs. A student's academic standing is comprised of two factors: cumulative GPA and progress toward a degree. In order to be in good academic standing, students are expected to maintain a cumulative GPA of 3.00 or above and make continued progress towards their degree.

Students are placed in the Academic Probation status after earning a cumulative GPA below 3.00. Students may also be placed on Academic Probation if they fail to make progress toward their degree, as determined by their Department or Program, or fail to meet provisional conditions as outlined in their admissions letter (if applicable). Students placed on Academic Probation will be notified in writing by the Dean's Office. It is important to note that students on Academic Probation are not eligible for a teaching assistantships or fellowships, nor are they eligible to complete degree milestones (i.e., comprehensive examinations, thesis proposal, oral defense, or graduation).

Students who are on Academic Probation for failing to meet GPA requirements must earn a GPA of at least 3.00 for each term that they enroll until they have achieved a cumulative GPA of 3.00 or above. If such a student fails to earn 3.00 term GPA, they are subject to Academic Dismissal. Students who are on Academic Probation for failure to make degree progress must satisfy the conditions set forth by the department or program and communicated by the probation letter by the specified deadline. If such a student fails to satisfy these conditions by the specified deadline, they are subject to Academic Dismissal. Dismissal is a final action. Dismissed students are not eligible for reinstatement at the University of Pittsburgh.

A student whose performance on a preliminary or comprehensive examination is judged to be inadequate may be subject to Academic Dismissal at the end of the term.

**Master's Degree Requirements**

University policies governing Master's programs can be found in the Regulations Pertaining to Master's Degrees policy. The information below summarizes further SCI-specific regulations.

**Credit Requirements**
The minimum requirement for any Master's degree is 30 credits. Not more than six credits may be granted toward the completion of the requirements for a Master's degree for work completed at another graduate institution. Students must achieve the minimum GPA established by their department or program, in no case less than 3.00, to take the comprehensive examination and to graduate.

**Comprehensive Examination**

Whenever a program substitutes an equivalent requirement for the comprehensive examination, the department or program must obtain prior approval from the SCI Academic Council and notify the University Council on Graduate Study and describe the situation. Students on inactive, special, or provisional status, or who have a GPA less than 3.00, are not eligible to take the comprehensive examination. See Comprehensive Examination under Regulations Pertaining to Master's Degrees for further detail on requirements for comprehensive exams.

**Thesis Option and Procedures**

The requirement of a thesis or its equivalent is at the discretion of individual departments or programs. If a thesis is submitted, its form must be in accord with specifications available from The ETD Format Guidelines Manual and approved by the Associate Dean for Academic Programs. A report of the final oral examination in defense of the Master's thesis must be filed with the SCI Records Office on the 5th floor of the Information Sciences building. For further information on thesis requirements, including the makeup of the thesis committee, see Thesis Option under Regulations Pertaining to Master's Degrees.

**PhD Degree Requirements**

University policies governing PhD programs can be found in the Regulations Pertaining to Doctoral Degrees policy. The information below summarizes further SCI-specific regulations.

**Credit Requirements**

The minimum requirement for the PhD degree of 72 credits may be earned in formal course work, directed study, independent study, and/or thesis and dissertation research. Students must achieve the minimum GPA established by their department or program, in no case less than 3.00, to be eligible to undergo the preliminary examination, to take the comprehensive examination, to be admitted to candidacy for the PhD degree, and to be graduated.

**Preliminary Examination**

The nature of the preliminary examination and the time at which it is conducted are determined by each department or program. In some programs, the preliminary doctoral exam/evaluation may be combined with a Master's comprehensive examination. See Preliminary Evaluation under Regulations Pertaining to Doctoral Study for further details on regulations pertaining to the exam. Students must be registered in the term they are completing the Preliminary Examination.

**Comprehensive Examination**

Comprehensive examination results must be reported promptly to the SCI Dean's Office, and no later than the last day of the term in which the examination is administered. Students must be enrolled in the term in which they are completing the Comprehensive Examination. See Comprehensive Examination under Regulations Pertaining to Doctoral Study for further detail on regulations regarding the exam.

**Doctoral Committee**

*Departmental membership status:* University of Pittsburgh faculty members with a primary or joint appointment in a SCI department are considered internal members of that department. Individuals holding primary appointments outside of the department are considered as external to the department. However, a University of Pittsburgh faculty member who holds a secondary appointment in a SCI department and is an active participant within the department may petition the department to be considered as an internal member, as determined by departmental criteria. Upon receiving internal status within a department, a faculty member may no longer act in an external capacity.

*Committee composition:* Doctoral dissertation committees are comprised of at least four members, including at least three internal members, and at least one external member from another department at the University of Pittsburgh or from an appropriate graduate program at another academic institution. The primary advisor and chair of the doctoral dissertation committee must be an internal member of the doctoral candidate's home department. The majority of committee members must be from the University of Pittsburgh, and all committee members from the University of Pittsburgh must be members of the graduate faculty (https://ir.pitt.edu/graduate-faculty-roster/). Under certain circumstances, active researchers with
appointments outside of academia may be approved as external committee members. The composition of the committee must be approved by the Department Chair and the Associate Dean for Academic Programs prior to scheduling the dissertation proposal.

Internal committee members who leave the University after a graduate student has been admitted to candidacy may remain on the committee in their original capacity for a period of up to 12 months. If the chair of the dissertation committee leaves the University, they may continue to serve as the sole chair of the committee for a period of up to 6 months; after this time, a co-chair must be appointed from within the department or program. After this 12-month period, a departed committee member is no longer eligible to be an internal member or committee chair, but may be added to the committee as an external member; this may necessitate the addition of further internal committee members. If a committee member retires, they may remain on the committee as long as they are still willing to serve, and are still active professionally in the academic community.

Any changes in the membership or roles of the committee must be approved by the Department Chair or Program Director and the Associate Dean for Academic Programs.

Admission to Candidacy for the PhD Degree

After completion of the overview/proposal, the student should, in consultation with the student's major advisor, file the application for admission to candidacy for the Doctor of Philosophy degree. Students are informed of admission to candidacy by written notification from the Associate Dean for Academic Programs. Students must be enrolled in the term in which they are completing the overview for candidacy. For a listing of requirements for admission to candidacy, see Admission to Candidacy for the Doctor of Philosophy Degree.

Admission to candidacy must be at least eight months before the defense of the dissertation in order to provide an opportunity for the members of the doctoral committee to review, criticize, and monitor the proposed research.

Meetings of the doctoral candidate and the dissertation committee must occur at least annually from the time the student gains admission to doctoral candidacy. A record of such meetings must be maintained in the student's file in their home department or program.

Dissertation

See Dissertation and Abstract under Regulations Pertaining to Doctoral Degrees for an overview of requirements and form for the dissertation and abstract.

Language of the Doctoral Dissertation

The language in which doctoral dissertations are written shall normally be English. Exceptions may be granted by the student's dean with the approval of the dissertation adviser and committee, but only for sound reasons of scholarship. Permission shall never be granted on the ground of inadequate command of English.

Final Oral Examination

Students preparing to take their final oral examination in defense of their dissertation should refer to Final Oral Examination under Regulations Pertaining to Doctoral Degrees for details on the examination. School-specific timelines and processes are outlined, below.

The final examination must be scheduled at least four weeks in advance. When determining a date for the examination, students should consider the ETD processing deadlines, allowing themselves sufficient time between final oral examination and ETD deadline to revise their dissertation and gather the related paperwork.

When an examination date is established, the chair of the doctoral committee must submit a defense scheduling form to the Dean's office, listing the title of the dissertation and the time and place for its defense. This allows adequate time for announcement in the University Times as required by University regulations.

At least two weeks prior to the dates set for the final oral examination, all members of the doctoral committee should be provided with a copy of the dissertation.

All members of the doctoral committee must physically attend the examination; exceptions can be made with the permission of the Associate Dean for Academic Programs. A report of this examination and a report on approval of the dissertation, signed by all members of the doctoral committee, must be sent to the Associate Dean for Academic Programs for approval. The report on the approval of the dissertation may be signed concurrently with or subsequently to the report of the final oral examination. If the decision of the committee is not unanimous, the case is referred to the Associate Dean for Academic Programs for resolution.
It is the responsibility of the student's advisor to ensure that the dissertation is in final form before requesting signatures of all committee members. After the final oral examination is successfully completed, the student must submit their dissertation electronically. As well, the University requires students submit various forms, publication agreements, and fees in addition to the Electronic Thesis and Dissertation (ETD). Students submit all materials outlined in the SCI PhD Graduation Checklist by the ETD & Paperwork deadline. Any paperwork that is signed must be the original and therefore should be mailed if you are unable to submit it in person. See the checklist for details. ETD deadlines and the SCI PhD Graduation Checklist can be found on the SCI Current Students > Graduation Procedures webpage.

After submission of the ETD and paperwork, the Records Office will review all items for completion and adherence to University formatting guidelines. Students must be available to make additional edits to formatting of their ETD; this process typically takes one month to complete before the document is approved for publication.

Students will be required to register for at least one credit in the term during which they expect either to complete degree requirements or have the oral defense. Students who have completed all credit requirements for the PhD degree may register for "Full-Time Dissertation Study." If the student is a doctoral candidate and off-campus, not using University facilities and/or faculty time, the candidate need only register for 1 credit per academic year to maintain active enrollment status.

If a student does complete all the work in a given term, including the dissertation defense, and has been cleared for graduation too late to be included on the graduation list for that term, the student may apply to graduate the following term and need not enroll for any courses or any credits, subject to approval. See "Student status during term of graduation" section for details.

**Graduation**

**Student status during term of graduation:** Graduate students are required to be in "active status" (registered for one credit per academic year) and enrolled during their term of graduation. If a student does not plan to enroll in credits during their graduation term, they must provide a valid and extenuating reason for this policy exemption via the request for a Graduation Enrollment Waiver form. All requests for this policy exemption will be reviewed by the Records Office and approved by the SCI Dean's Office and the University Registrar.

**Application:** *Graduation is not an automatic process.* Students must file an application for graduation, including additional materials as outlined on the School's Current Students website. The School's deadlines, related late fees, worksheets for tracking progress toward degree completion, and contact information for graduation applications are available on its Current Students website.

If your graduation is postponed, you must reapply by completing another Graduation Application.

**University Commencement:** Candidates for graduation are encouraged to appear in person at the University Commencement Ceremony. Although degrees are conferred at commencement for all graduation periods, the official certification for April and May graduates occurs several weeks after the ceremony.

**School Ceremony:** The School of Computing and Information hosts an event to recognize its graduating students and awardees at the end of each term.

Certification of degree graduation requirements is processed after the recognition ceremony; Reading of a student's name at the Recognition Ceremony is not an indication of the student having met graduation requirements.

Event details, travel tips, and information regarding tickets are hosted on the School's website at www.sci.pitt.edu.

**POST-GRADUATION PROCESSING**

**Certification:** Graduation certification is the process run by advisors and staff to ensure students have met all graduation requirements. This process is run after grades are posted for the term in question. Students who are concerned about their graduation eligibility should first review their academic advisement report (AAR) and then meet with their academic advisor.

**Documentation (transcripts, diplomas, etc.):** Official documentation of graduation is managed by the University Registrar's Office. Inquiries regarding transcripts and diplomas should be directed to that office's Graduation/Diplomas service area.

All diplomas are mailed to students approximately four weeks after the official certification date for each graduation period.
Special Academic Opportunities/Programs

Multiple Independent Degree Programs within SCI

Students may pursue two independent graduate degrees simultaneously in two different schools within the University (joint degree) or two different departments within the same school (dual degree). Students desiring to enroll in two degree programs must have approval from both program faculties and their respective deans, must be admitted into both programs, and must satisfy the degree requirements of both programs. Students are billed at the tuition rate of the primary academic program. Normally, such students should be enrolled for no more than a total of 15 credits per term.

The same examination, thesis, or dissertation cannot be used to fulfill requirements for two independent degrees, although a maximum of 6 credits of course work may be used in partial fulfillment of the requirements of both degrees. It is the responsibility of the dean or deans, if two schools are involved, to ensure that this regulation is enforced.

For further detail, please refer to the University policy regulating pursuit of Two Independent Degree Programs Simultaneously.

Joint SCI/GSPIA MSIS Degree Program

The School of Computing and Information will continue to honor the joint degree agreement made between the School of Information Sciences and the Graduate School of Public and International Affairs (GSPIA). The program allows for students to complete the Master of Science in Information Science (MSIS) degree and one of three degrees in GSPIA simultaneously. To be admitted fully into the joint program, students must be accepted by both GSPIA and SCI. Admissions and course of study details are available on the MSIS degree requirements page of this catalog.

Programs and Course Offerings

School of Computing and Information Faculty

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Department</th>
<th>Highest Degree</th>
<th>Awarding Institution</th>
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<tr>
<td>Mai Abdelhakim</td>
<td>Visiting Assistant Professor</td>
<td>Informatics and Networked Systems</td>
<td>PhD</td>
<td>Michigan State University</td>
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<td>Daniel Ahn</td>
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<td>Dmitriy Babichenko</td>
<td>Professor of Practice</td>
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<td>Mary K. Biagini</td>
<td>Associate Professor</td>
<td>Information Culture and Data Stewardship</td>
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<td>University of Pittsburgh</td>
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<td>Kayla Booth</td>
<td>Visiting Assistant Professor; Assistant Director, i3 Program</td>
<td>Information Culture and Data Stewardship</td>
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<td>Peter Brusilovsky</td>
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<td>Shi-Kuo Chang</td>
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<td>James &quot;Kip&quot; Currier</td>
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<td>Taieb Znati</td>
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School of Dental Medicine

Established in 1896, the University of Pittsburgh School of Dental Medicine has been educating students to take their places among the best dental practitioners, researchers and educators in our region, across the country, and even around the world. We are one of six Schools of Health Sciences at the University and are the only school to manage our own clinic. Our accomplishments reflect the dedication and success of each member of the School of Dental Medicine family.

We are proud of our long tradition as innovators in dental medicine. Our first female student was admitted 117 years ago, and today more than half of our vibrant and diverse first-year pre-doctoral class are women. We nurture in our students a strong foundation in the biological, behavioral and clinical sciences and a belief in the importance of professionalism and life-long learning.

Half a century ago we pioneered the specialty dental care that we now deliver in our fully equipped Center for Patients with Special Needs. The School's general dental clinics and 11 specialty clinics play an integral role in improving the oral health of the patient population of southwestern Pennsylvania and beyond. Some patients travel hundreds of miles to access the high-quality care our clinics provide every day.

Our researchers expand the horizons of knowledge and are internationally renowned for their groundbreaking developments in the areas of craniofacial genetics and craniofacial regeneration. We are identifying genes that contribute to complex human phenotypes, and are using tissue engineering to heal wounds and restore function and appearance to defects of the face and skull.

Every day, the positive contributions of our faculty, staff, residents and students—the Pitt Dental Medicine family—demonstrate their commitment to our mission of advancing the future of dental medicine through teaching, research and service.

Degree Programs

Along with several specialized degree programs, degrees offered at the School of Dental Medicine include the doctor of dental medicine (DMD); doctor of philosophy (PhD); master of science (MS); master of public health (MPH) offered in conjunction with the Graduate School of Public Health; and bachelor of science (BS).

The four-year Predoctoral (DMD) Program prepares students to provide comprehensive care to a diverse patient population. The competency-based curriculum emphasizes health promotion and disease prevention, and prepares students to provide individualized treatments using the best scientific evidence available. Graduates are equipped to practice as independent, entry-level general practitioners.

The Advanced Standing (DMD) Program places qualified graduates of foreign dental schools as third-year dental students. These students are integrated into the program and complete the third- and fourth-years of the pre-doctoral curriculum with the rest of the class.

The Oral Biology Program (MS and PhD) encompasses the study of fundamental biological phenomena related to the development, structure, and function of the craniofacial region as well as the development of new therapies, biomaterials, and diagnostic tools for the treatment of diseases and disorders in the craniofacial area with the aim of improving health. Current research focuses involve craniofacial regeneration and genetics.

The School of Dental Medicine offers advanced residency certificate and Master of Dental Medicine degree programs in each of the full array of dental specialties.

In collaboration with Pitt Public Health, the four-year DMD/MPH in dental public health offers customizable course selection with a special emphasis on oral health-specific public health issues.

The University of Pittsburgh School of Dental Medicine's Dental Hygiene Program provides students a unique academic environment where they can earn either an Associate of Science or a Bachelors Degree in Dental Hygiene. The interprofessional educational experiences within the school's specialty dental clinics and the University-based hospitals, in conjunction with didactic, community outreach, and research activities, affords the delivery of high-quality education. To learn more about the Dental Hygiene Program, please visit the Pitt Undergraduate Catalog.

General Dentistry and Specialty Clinics

The School of Dental Medicine provides clinical education and patient care through 15 dental clinics encompassing general dentistry, anesthesiology, special needs, emergency, endodontics, implants, oral and maxillofacial pathology, oral and maxillofacial surgery, orthodontics and dentofacial orthopaedics, pediatric dentistry, periodontics and preventive dentistry, dental hygiene, endodontics, prosthdontics, radiology, and restorative dentistry/comprehensive care.
Clinical Centers
The Multidisciplinary Implant Center focuses on patient care, teaching, and research related to the treatment of tooth loss and the functional bone and soft tissue deficits that can follow tooth loss.
The Center for Patients with Special Needs was established by Dean Thomas W. Braun as a school priority to centralize and increase treatment capacity for patients with physical, developmental, neurological, and intellectual disabilities.
University Dental Health Services (UDHS) is a legally separate nonprofit practice plan that is closely affiliated with the School of Dental Medicine. UDHS providers are full- or part-time faculty members, many of whom are board-certified specialists and nationally recognized experts in their respective fields.

Research Strengths
Research efforts include dental and craniofacial genetics, craniofacial anomalies, caries, periodontal disease, pharmacology, pain control, tissue engineering, craniofacial regeneration, educational research, informatics, and implantology.

Identification
The School of Dental Medicine is undertaking investigations to identify genes that contribute to complex human phenotypes, primarily those involved in dental and craniofacial disorders, including behavioral and epidemiological factors. New territory is being charted to develop the first-known collection of DNA samples paired with anonymized dental records to support genetics research.

Treatment
Tissue engineering-based approaches are being developed to treat complex multi-structural wounds and defects of the face and skull in a way that restores both function and appearance. The school is at the forefront of research to develop relevant translational treatment solutions usable by practicing dentists.

Application
The School of Dental Medicine is identifying factors that lead to oral health disparities in children and families in Appalachia. Oral public health research leads to improved interventions, understanding, and advancements for the future of oral health education and treatment.

Demographics
For the 2016-17 academic year, the School of Dental Medicine accepted 80 incoming first professional degree or doctor of dental medicine students from a pool of 2,003 applicants. Forty-four percent of the 315 students enrolled in the doctoral program are women. There are 63 students in the dental hygiene certificate program and 27 in the bachelor of science in dental hygiene program. The School of Dental Medicine has 97 full-time, 107 part-time, 115 adjunct, and 16 emeritus faculty members.

Mission
The mission of the University of Pittsburgh School of Dental Medicine is to improve oral health through Teaching, Research and Service:

- Teaching a new generation of clinicians to deliver oral health care with skill and compassion
- Research that expands the boundaries of our knowledge and builds on discoveries to enhance human life
- Service to the diverse community of patients who entrust themselves to our care

Vision
The University of Pittsburgh School of Dental Medicine will be a diverse, welcoming and supportive community widely recognized for excellence and leadership in the improvement of oral health.

- We will train our students to care for patients skillfully, professionally, and compassionately; to treat each patient with respect and kindness; and to be aware at all times of the privilege and responsibility of being entrusted with the care of another human being. We will model evidence-based treatment and the importance of life-long learning.
- We will actively contribute to the mission of the University of Pittsburgh to be a leading research institution, broadening the scientific foundations of dental and craniofacial medicine and translating new knowledge into life-enhancing treatments for people everywhere.
We will be known for our clinical expertise and serve as a regional resource to which our neighbors will turn for comprehensive care. We will use the best techniques and current technologies to create optimal outcomes for our patients.

We will maintain a strong and enduring connection with our alumni to help ensure our School's success for generations to come. Our alumni will carry on our mission through clinical excellence, service to the dental profession, and generous outreach to people in need.

Values

- Service: Providing exemplary service to our students, faculty, patients, and society
- Passion for Excellence: Continuously striving to achieve the highest level of excellence in education, research, and service
- Professionalism and Integrity: Adhering to the highest ethical and professional standards of our profession
- Leadership: Serving as role models and mentors to students, faculty, and staff to shape the future of oral health care
- Collaboration: Embracing a team approach to accomplish shared goals
- Humanism: Respecting the contributions of each person within the School of Dental Medicine family to foster an environment of trust, safety, and fairness

School of Dental Medicine Faculty

School of Dental Medicine Full-time Faculty

Pre-doctoral (DMD) Program

Welcome to Pitt Dental Medicine

Students from Pennsylvania, across the country and around the world come to study at the University of Pittsburgh School of Dental Medicine. Among the best dental schools in the country, the School of Dental Medicine seeks only the most qualified students for admission to nationally recognized predoctoral and graduate academic programs. The central program at the school is the Doctor of Dental Medicine (DMD) program. Providing students with a solid evidence-based education in dental medicine, graduates of the program are well prepared to be practicing clinicians or researchers. The four-year predoctoral program begins at the White Coat Ceremony and leads to a Doctoral degree in Dental Medicine (DMD). Advanced dental education and residency programs are available to students, including the Oral Biology Graduate Program.

Competency-Based Educational Program

The four-year predoctoral program prepares students to provide basic health promotion and disease prevention, diagnose and develop treatment plans, analyze complex medical and dental cases, and achieve competency in all areas defined for general practitioners. The competency-based curriculum also reflects the school's commitment to supporting the development of professionalism, life-long learning, and synthesis of clinical and biomedical science concepts.

View our four-year curriculum.

Beyond the Classroom

Student learning continues far beyond the classroom. Community service is encouraged through the Student Community Outreach Program and Education (SCOPE) and the University of Pittsburgh WISER Center offers dental students hands-on medical experience in a world-class multidisciplinary simulation-based training facility. The Simulation Clinic gives students life-like experience with simulated patients in a classroom, clinical learning environment and the Fassinger Learning Resource Center lets students continue learning past the traditional hours and space of the classroom meetings.
Students are encouraged to participate in any of a number of the school's active student organizations to connect with others sharing and investigating the same interests. Student organizations focus on advancing knowledge and extend the frontiers of a particular segment of oral health. Personal, academic and career counseling are available through the school's Office of Student Affairs for all students. An extensive library system, learning skills center, housing resource center, student health care and recreational and fitness facilities are available through the University.

Research opportunities abound for students in good academic standing to study many different aspects of dental research, including craniofacial genetics, tissue regeneration, informatics, public health and other fields. With an extended history of profound dental research, the University of Pittsburgh School of Dental Medicine also fosters interactions between dental students and researchers in other disciplines. Academic rewards and contributions to the dental profession are just two reasons many students conduct research at the school. Students have opportunities to share their projects and results at national meetings and conferences and provide excellent learning and networking opportunities with colleagues. Student researchers also may compete for awards, scholarships, and other opportunities at the University.

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We are proud of our long tradition as innovators in dental medicine. Our first female student was admitted 117 years ago, and today more than half of our vibrant and diverse first-year pre-doctoral class are women. We nurture in our students a strong foundation in the biological, behavioral and clinical sciences and a belief in the importance of professionalism and life-long learning.

Half a century ago we pioneered the specialty dental care that we now deliver in our fully equipped Center for Patients with Special Needs. The School's general dental clinics and 11 specialty clinics play an integral role in improving the oral health of the patient population of southwestern Pennsylvania and beyond. Some patients travel hundreds of miles to access the high-quality care our clinics provide every day.

Our researchers expand the horizons of knowledge and are internationally renowned for their groundbreaking developments in the areas of craniofacial genetics and craniofacial regeneration. We are identifying genes that contribute to complex human phenotypes, and are using tissue engineering to heal wounds and restore function and appearance to defects of the face and skull. Every day, the positive contributions of our faculty, staff, residents and students-the Pitt Dental Medicine family-demonstrate their commitment to our mission of advancing the future of dental medicine through teaching, research and service.

Degree Programs

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The four-year Doctor of Dental Medicine (DMD) Program prepares students to provide comprehensive care to a diverse patient population. The competency-based curriculum emphasizes health promotion and disease prevention, and prepares students to provide individualized treatments using the best scientific evidence available. Graduates are equipped to practice as independent, entry-level general practitioners.

The Advanced Standing (DMD) Program places qualified graduates of foreign dental schools as third-year dental students. These students are integrated into the program and complete the third- and fourth-years of the pre doctoral curriculum with the rest of the class.

The Oral Biology Program (MS and PhD) encompasses the study of fundamental biological phenomena related to the development, structure, and function of the craniofacial region as well as the development of new therapies, biomaterials, and diagnostic tools for the treatment of diseases and disorders in the craniofacial area with the aim of improving health. Current research focuses involve craniofacial regeneration and genetics.

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Class of 2020

- Class Size: 80
- Male: 49 Female: 31
- Average Age: 24
- Undergraduate Schools Represented: 54

Academics

- DAT AA: 21.4
- Average Total GPA: 3.64
- Average Science GPA: 3.55

Ethnicity/Race

- Caucasian: 60*
- Asian: 17*
- Hispanic: 5*
- African American: 4*
- American Indian: 4*
- Asian-Indian: 2*
- *Multiracial: 7

Important Information
Doctor of Dental Medicine, DMD

DMD Curriculum

Following is a listing of all DMD courses and a typical curriculum for each of the four years of the program:

First Year-Fall Term

- CDENT 5116 - EVIDENCE BASED DENTISTRY
- CDENT 5117 - PROFESSIONALISM IN DENTAL MEDICINE
- DENT 5115 - HEALTH PROMOTION AND DISEASE PREVENTION 1
- DENT 5118 - QUALITIES OF A GENERAL DENTIST 1
- ORBIOL 5113 - MOLECULAR AND CELL BIOLOGY 1
- ORBIOL 5114 - MOLECULAR AND CELL BIOLOGY 2
- ORBIOL 5115 - MICROBIAL PHYSIOLOGY AND IMMUNOLOGY
- ORBIOL 5120 - BODY TISSUES
- ORBIOL 5125 - GENERAL EMBRYOLOGY AND CRANIOFACIAL ORGANOGENSES
- ORBIOL 5130 - ORAL TISSUES
- RESTD 5111 - DENTAL ANATOMY AND MORPHOLOGY
- RESTD 5115 - DENTAL ANATOMY AND MORPHOLOGY LAB

First Year-Spring Term

- CDENT 5145 - HEALTH PROMOTION AND DISEASE PREVENTION 2
- CDENT 5146 - CARIOLOGY
- DENT 5148 - QUALITIES OF A GENERAL DENTIST 2
- ORBIOL 5140 - SYSTEMIC GROSS ANATOMY
- ORBIOL 5141 - SYSTEMIC HUMAN PHYSIOLOGY 1
- ORBIOL 5142 - THE SKULL: BASIC AND APPLIED ANATOMY
- ORBIOL 5143 - HEAD AND NECK SOFT TISSUE ANATOMY
- ORBIOL 5144 - SYSTEMIC HUMAN PHYSIOLOGY 2
- PERIO 5141 - PERIODONTOLOGY 1
- PERIO 5149 - PERIODONTAL INSTRUMENTATION 1
- PROSTH 5142 - DENTAL MATERIALS
- RESTD 5143 - PRINCIPLES OF OPERATIVE DENTISTRY 1
- RESTD 5147 - PRINCIPLES OF OPERATIVE DENTISTRY 1 LABORATORY
First Year-Summer Term

- CDENT 5173 - HEALTH PROMOTION AND DISEASE PREVENTION 3
- DENT 5178 - QUALITIES OF A GENERAL DENTIST 3
- DIASC 5170 - GENERAL AND SYSTEMIC PATHOLOGY
- ORBIOL 5171 - IMMUNOLOGY AND INFECTIOUS DISEASES
- PROSTD 5171 - PRINCIPLES OF DENTAL OCCLUSION
- RESTD 5172 - PRINCIPLES OF OPERATIVE DENTISTRY 2
- RESTD 5176 - PRINCIPLES OF OPERATIVE DENTISTRY 2 LAB

Second Year-Fall Term

- DENT 5211 - DIAGNOSIS AND TREATMENT PLANNING 1
- DENT 5218 - QUALITIES OF A GENERAL DENTIST 4
- DIASC 5211 - INTRODUCTION TO RADIOLOGY PHYSICS AND BASIC INTERPRETATION
- DIASC 5212 - ORAL AND MAXILLOFACIAL PATHOLOGY
- ENDOD 5210 - ENDODONTICS I
- ENDOD 5216 - ENDODONTICS I LAB
- ORBIOL 5214 - PHARMACOLOGY AND THERAPEUTICS
- PEDENT 5211 - PEDIATRIC DENTISTRY I
- PERIO 5210 - PERIODONTAL INSTRUMENTATION 2
- PERIO 5212 - PERIODONTOLOGY 2
- PROSTD 5211 - FIXED PARTIAL DENTURES I
- PROSTD 5213 - COMPLETE DENTURES I
- PROSTD 5215 - FIXED PARTIAL DENTURES I LAB
- PROSTD 5217 - COMPLETE DENTURES I LAB

Second Year-Spring Term

- DENT 5242 - DIAGNOSIS AND TREATMENT PLANNING 2
- DENT 5248 - QUALITIES OF A GENERAL DENTIST 5
- DIASC 5241 - RADIOLOGY, IMAGING AND INTERPRETATION I
- DSANE 5241 - ANESTHESIA I: LOCAL ANESTHESIA
- DSANE 5245 - LOCAL ANESTHESIA TECHNIQUE LAB
- ENDOD 5247 - ENDODONTICS II LAB
- ENDOD 5252 - ENDODONTICS II
- ODO 5242 - INTRODUCTION TO ORTHODONTICS
- ORBIOL 5244 - CRANIOFACIAL GENETICS
- ORSUR 5241 - ORAL SURGERY I
- PEDENT 5242 - PEDIATRIC DENTISTRY II LAB
- PEDENT 5253 - PEDIATRIC DENTISTRY II
- PERIO 5243 - PERIODONTAL CLINIC
- PROSTD 5241 - REMOVABLE PARTIAL DENTURES
- PROSTD 5245 - REMOVABLE PARTIAL DENTURES LABORATORY
- PROSTD 5251 - FIXED PARTIAL DENTURES II
- PROSTD 5256 - FIXED PARTIAL DENTURES II LAB
- RESTD 5244 - GERIATRICS
Second Year-Summer Term

- CDENT 5281 - SCOPE 1
- CDENT 5282 - CLINICAL APPLICATION OF PROBLEM-SOLVING SKILLS
- DENT 5278 - QUALITIES OF A GENERAL DENTIST 6
- DENT 5283 - DIAGNOSIS AND TREATMENT PLANNING 3
- DSANE 5272 - ANESTHESIA 2: MEDICAL EMERGENCIES
- ODO 5275 - INTRODUCTION TO ORTHODONTICS LAB
- ORSUR 5282 - ORAL SURGERY 2
- PROSTH 5271 - DIGITAL DENTISTRY 1
- PROSTH 5273 - FIXED PARTIAL DENTURES 3
- PROSTH 5276 - FIXED PARTIAL DENTURES 3 LABORATORY
- PROSTH 5282 - COMPLETE DENTURES 2
- RESTD 5281 - PRINCIPLES OF OPERATIVE DENTISTRY 3

Third Year-Fall Term

- DENT 5310 - SPECIAL NEEDS DENTISTRY
- DENT 5313 - ONGOING PERFORMANCE EVALUATION 1
- DENT 5318 - QUALITIES OF A GENERAL DENTIST 7
- DIASCI 5320 - MANAGEMENT OF DENTAL EMERGENCIES
- DSANE 5311 - PATIENT MANAGEMENT: ENTERAL SEDATION
- DSANE 5313 - ANESTHESIA 3: PAIN AND ANXIETY CONTROL
- DSANE 5315 - NITROUS OXIDE LAB
- DSANE 5317 - ADVANCED LOCAL ANESTHESIA TECH LAB
- ENDOD 5313 - ENDODONTICS 3
- ODO 5319 - CLINICAL ORTHODONTICS
- ORSUR 5313 - ORAL SURGERY 3
- ORSUR 5314 - PHYSICAL DIAGNOSIS AND EVALUATION
- PEDENT 5315 - PEDIATRIC DENTISTRY 3
- PROSTH 5311 - IMPLANTOLOGY 1

Third Year-Spring Term

- CDENT 5342 - INTRODUCTION TO BEHAVIORAL DENTISTRY
- DENT 5348 - QUALITIES OF A GENERAL DENTIST 8
- DENT 5353 - ONGOING PERFORMANCE EVALUATION 2
- DIASCI 5341 - SEMINARS IN ORAL PATHOLOGY AND ORAL MEDICINE
- DSANE 5342 - CLINICAL MEDICINE
- DSANE 5344 - MEDICAL EMERGENCIES - WISER CENTER
- ORBIOL 5340 - CURRENT TOPICS IN ORAL HEALTH RESEARCH
- ORSUR 5344 - ORAL SURGERY 4
- PERIO 5343 - PERIODONTOLOGY 3
- PROSTH 5346 - IMPLANTOLOGY 2
- PROSTH 5348 - DIGITAL DENTISTRY 2
- RESTD 5342 - PRACTICE ADMINISTRATION

Third Year-Summer Term
Advanced Standing (DMD) Program

The University of Pittsburgh School of Dental Medicine is committed to diversity within the dental profession. We have recruited students from more than 20 countries around the globe. Our Advanced Standing students are integrated seamlessly into the predoctoral DMD program and are provided with the same opportunities and incentives as our regular class. We believe in embracing and learning from each other's diverse backgrounds. Our program also provides numerous possibilities for research, community outreach and a personalized educational experience apart from the already rich, holistic and innovative clinical experience that we provide to our students.
Our Advanced Standing Program for dentists holding a dental degree from other countries employs a mandatory two-year curriculum. Qualified Advanced Standing Program students are placed in the First Professional Program (DMD) as third-year dental students following a mandatory summer program, and must complete the third- and fourth-year curriculum as prescribed. No waiver of classes is granted.

Education and Clinical Care

Our comprehensive clinical care model, coupled with evidence-based practice, allows for limitless student experiences. Utilizing advanced technologies, such as simulation patient labs, CBCT imaging, CAD/CAM, implants, 3D printing and more, provides unlimited opportunities which are student driven and faculty guided. With all eight specialty training programs, plus the country's flagship dental anesthesiology program, students are trained by experts in these specific fields while enjoying a low student to faculty ratio and a collaborative Pitt Dental Family atmosphere. Additionally, students gain valuable experience in our renowned Center for Patients with Special Needs and Multidisciplinary Implant Center. Students also may choose to pursue various certificates ranging from dental public health to academic dentistry. Being a part of one of the oldest programs in the country with a strong alumni base and support, students have the prerogative to participate in mentoring experiences, leadership possibilities, and many other social activities.

The University of Pittsburgh School of Dental Medicine participates in the Centralized Application for Advanced Placement for International Dentists (CAAPID) program. The deadline for application is July 5 of the year prior to starting the program. Applications for the Advanced Standing Program that are sent directly to the University of Pittsburgh will not be accepted. Please visit the CAAPID website for specific information.

For detailed information about the program and application requirements and processes, please visit our website. If you have questions, please email us at kaa77@pitt.edu.

About the School

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Other Degree Programs

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### Research Strengths

Pitt Dental Medicine is ranked 7th nationally for NIDCR research funding. Students have the opportunity to participate in innovative research involving craniofacial and dental genetics, craniofacial regeneration, informatics, caries research, the county's first DNA registry and repository obtained from saliva samples, and many clinical and translational projects.

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### Advanced Standing Curriculum

Advanced Standing students are required to take a summer course before they join other DMD students in their third and fourth years. Learn more about the third- and fourth-year curriculum for Predoctoral DMD students.

### Advanced Dental Education and Residency Programs

The School of Dental Medicine offers ten Advanced Dental Education and Residency Programs leading to a Certificate of Completion in the respective program. Programs of three-year duration offer an optional educational tract leading to a Master of Dental Science degree (MDS).

All residents in the various specialties begin their advanced education by studying a core curriculum. It includes, but is not limited to, an orientation program; Clinical Operations; BLS Certification; Infection Control Policies and Procedures; Chemical Dependency; Hospital Protocols and Procedures; Conferences / Classes; Advanced Oral Pathology; Applied Head and Neck Anatomy; Clinical Pharmacology; Intravenous and Inhalation Sedation; Management of Medical Emergencies; Mineralized Tissue Biology; Multidisciplinary Treatment Planning Grand Rounds; Oral and Maxillofacial Radiology and Imaging; Pathobiology and Immunology; and Research Design and Methodology.

Details about the residency programs at Pitt Dental Medicine is available on our website at [dental.pitt.edu/advanced-dental-education-residency-programs](dental.pitt.edu/advanced-dental-education-residency-programs).

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**All Residency Programs Core Courses**
Advanced Education in General Dentistry

The University of Pittsburgh's Advanced Education in General Dentistry (AEGD) Program was established in 1989. The one-year long program is fully accredited, enrolls two students per year, and begins on July 1 of each year. We welcome students from diverse backgrounds. Residents for the 2016-17 program year are alumni of the University of Pittsburgh School of Dental Medicine.

The program follows the School of Dental Medicine's academic calendar and daily schedule, including patient appointments on Tuesday evenings. There are no weekend rotations, but a 24-hour on call schedule is maintained for the School of Dental Medicine. There is a roughly, two-week break at the end of December and approximately 10 paid holidays and 10 paid days off during the one-year residency.

The AEGD resident participates with the other post graduate residents at the School of Dental Medicine in the required post graduate core curriculum plus they both attend and present at seminars held in the school. AEGD Residents are encouraged to document patient cases using the fully equipped digital camera maintained in the AEGD clinic. The didactic program constitutes approximately 15% of the total experience. There is a rotation through the Implant Center which provides both clinical and didactic experience in the placement and restoration of dental implants. AEGD Residents rotate through the Center for Patients with Special Needs to provide treatment to patients using a variety of behavioral and pharmacological techniques. In conjunction with the School's Department of Anesthesiology, residents treat patients using intravenous sedation, nitrous oxide and/or general anesthesia. Residents receive the instruction to become eligible for an Anesthesia Restricted Permit II, allowing them to administer nitrous oxide in the Commonwealth of Pennsylvania.

Program Goals

The Advanced Education in General Dentistry (AEGD) program at the University of Pittsburgh School of Dental Medicine provides training to the recent graduate in clinical dentistry and applied basic science beyond the pre-doctoral level, and it refines and enhances those skills necessary for the generalist to provide comprehensive patient care for all population groups. It is also designed to instill confidence in the new dentist to allow him/her to become a leader in the general dental community.

The overall goals of the program are:

1. Enhance the resident's competence and confidence in the various clinical disciplines, which are integral components of general dentistry.
2. Enhance the resident's clinical judgment and develop general dentists with a broad knowledge of dental medicine and related interdisciplinary subjects.
3. Enhance the resident's ability to interact with all health practitioners involved in comprehensive patient treatment - both medical consultations and appropriate consultations and referrals to dental specialists.
4. Enhance the resident's understanding of and provide experience in practice administration, including communication skills, practice management, psychological aspects of patient management, risk management and quality assurance activities.
5. Prepare the residents to become general dentists to practice, teach, and be involved in academic presentations in general dentistry.
6. Develop general dentists who will have a thorough knowledge of the basic and clinical aspects of general dentistry and who will also have the skills and abilities to treat patients who present complex and unusual treatment needs.
7. Understand the oral health needs of communities and engage in community service through the provision of treatment to patients with special needs and underserved populations.
8. Develop General Dentists that demonstrate principles of ethical reasoning, ethical decision-making, and professional responsibility as they pertain to the academic environment, research, patient care, and practice management.

Detailed information about requirements and application for the program are available at dental.pitt.edu/aegd

Dental Anesthesiology Certificate
The Department of Dental Anesthesiology directs and coordinates the three-year, CODA accredited, dental anesthesiology residency program. The goal of this program is to prepare dentists to manage pain and anxiety in adult, pediatric and special needs patients by using pharmacologic and non-pharmacologic techniques. A significant portion of the University of Pittsburgh School of Dental Medicine Residency Program in Dental Anesthesiology is a unit of the medical anesthesiology residency program, administered through the UPMC Medical Education Program (UPMC-MEP). At the conclusion of the program, the dentist will earn a certificate in dental anesthesiology and be proficient in providing all levels of anesthesia services for ambulatory patients undergoing a variety of medical and dental procedures. A maximum of four dental anesthesiology residents are selected each year. They have the same responsibilities and are expected to meet the same competencies as medical residents. Residents in dental anesthesiology have standard postgraduate salaries and benefits.

Residents in the Dental Anesthesiology Residency Program may elect to pursue a master of dental science degree (MDS) alongside their certificate. Eligible residents who elect this option must pass the Master of Dental Science Entrance Examination and enroll in the tract with the Pitt Registrar's Office. Please talk with the dental residency program administrator for details.

Program Description by Year

The first year of the resident's clinical experience begins at the dental school with the resident attending all introductory courses and conferences in anesthesiology intended for post-graduate first-year residents. The dental resident becomes familiar with the anesthetic management of patients undergoing an array of dental procedures, including pediatric, special needs, oral surgery and implant surgery. Within this first year, one month, each, is devoted to training in Internal Medicine, Intensive Care Medicine, Emergency Medicine, and Cardiology.

The second and third years of the residency continue with rotations through UPMC Presbyterian and Montifiore Hospitals, UPMC St. Margaret's, Children's Hospital of Pittsburgh of UPMC, and Magee-Womens Hospital of UPMC. During this rotation cycle, residents will participate in the anesthetic management of patients undergoing general surgery, complex head and neck procedures, orthopedic surgery, and transplantation operations. Three months at UPMC St. Margaret's will provide experience in a high-paced operating room that prepares the resident for private practice. Regional anesthesia and advanced pain management techniques are also developed. Children's Hospital of Pittsburgh of UPMC offers a diversity of experiences in managing the anesthetic requirements of children of all physical sizes and ages who are undergoing a wide variety of surgical procedures. Magee-Womens Hospital of UPMC gives the resident an opportunity to learn about epidural and spinal anesthesia techniques intended for obstetric procedures along with general surgery experience in the hospital operating rooms. Magee-Womens Hospital of UPMC utilizes an after-hours call schedule. The resident serves at the University of Pittsburgh School of Dental Medicine one day per week in the winter months, providing clinical care and lectures in the management of medical emergencies in the dental setting to post-graduate dental specialty students.

During the final three months, residents devote time to completing research projects, providing clinical anesthesia care, and teaching concepts of outpatient anesthesia to pre-doctoral students.

A focus of the training includes developing skills in the management of special needs patients receiving dental care. The University of Pittsburgh School of Dental Medicine has an active Center for Patients with Special Needs that provides the resident with a unique opportunity to provide anesthesia services to this underserved population. Residents will take part in regular journal reviews of current literature and a structured lecture series in anesthesiaology. In addition, residents are expected to attend at least one national conference per year and initiate work on a mentored clinical research project.

The applicant must submit the American Dental Education Association Postdoctoral Application Support Service (ADEA PASS) application and register for the Match Program.

Learn more about requirements and application to the program by visiting dental.pitt.edu/dental-anesthesiology

The advanced education in general dentistry program is accredited by the Commission on Dental Accreditation (CODA). The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653, or at 211 East Chicago Avenue, Chicago, IL, 60611. The Commission's web address is http://www.ada.org/100.aspx. The Commission on Dental Accreditation has accredited the postdoctoral program in advanced education in general dentistry. However, this education area is not one of the American Dental Association (ADA) recognized dental specialty areas. Therefore, dentists graduating from this program cannot announce that they are specialists, as recognized by the American Dental Association.

Endodontics Certificate
The University of Pittsburgh School of Dental Medicine's Endodontic Residency Program was initiated by Dr. Andrew Michanowicz in May, 1969. This fully accredited two-year program enrolls four students per year. Residents start their program on July 1 of each year.

Throughout the years, the Endodontic Residency Program has continuously incorporated the latest innovations in the field. The use of endodontic microscopy is the standard for each procedure. Residents are expected to have a working knowledge and experience with different file systems from various companies. Each resident has their own ultrasonic and advanced irrigation devices.

Research opportunities in several fields are available. The residents have the opportunity to work with National Institute of Health (NIH) funded researchers. Projects regarding microCT, bone biology, and craniofacial regeneration are available for resident participation.

The program helps the residents develop knowledge regarding every aspect of endodontics and prepares them to become members of the American Board of Endodontics.

On average, residents complete at least 350 cases prior to graduation. Cases include standard root canal therapy, retreatments, endodontic microsurgery, and pulpal regeneration.

Overall, the Endodontic Residency Program prides itself in helping residents develop and master endodontic skills while simultaneously identifying and pursuing avenues of interest in relevant basic science and endodontic technology.

Application

Applications are processed using ADEA Postdoctoral Application Support Service (PASS), or the self-managed application. A fee of $50 is charged to those who chose to use the self-managed application. The application deadline is Sept. 2nd of the previous year. Interviews will be granted on a rolling basis.

For more information, please visit dental.pitt.edu/endodontics-residency

The advanced specialty education program in endodontics is accredited by the Commission on Dental Accreditation (CODA). The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653, or at 211 East Chicago Avenue, Chicago, IL, 60611. The Commission's web address is http://www.ada.org/100.aspx.

General Practice Residency

The General Practice Residency (GPR) Program, sponsored by the University of Pittsburgh Medical Center (UPMC), offers a one-year program that provides residents with postdoctoral clinical and didactic experiences. Based in the UPMC Montefiore Dental Center on the UPMC Presbyterian/Shadyside Campus, the program enrolls a combined total of three (3) residents each year. Residents completing the GPR earn a certificate of training.

Guided by the philosophy that oral health is an integral and interactive aspect of total health, residents engage in approximately nine months of comprehensive dental care. The remaining three months are spent on rotations in anesthesia, emergency medicine, head and neck radiology, and oral and maxillofacial surgery.

In addition to intensive exposure to hospital-based dentistry, the program provides clinical and didactic training across a range of dental specialties, including endodontics, periodontics, implant dentistry, prosthodontics, oral and maxillofacial surgery, oral pathology/oral medicine, orthodontics, pediatric dentistry and treating patients with special needs. Instruction is also provided in ancillary topics pertinent to dental practice, such as patient evaluation and physical examination, emergency medical care, inpatient care and hospital organization, and a multitude of other medical and dental subjects.
Throughout the program, residents focus on the attainment of several objectives, all of which are derived from the Commission on Dental Accreditation's Standards for Advanced Education Programs in General Practice Residency. Upon completion of the program, General Practice residents are prepared to:

- Act as primary care providers, delivering emergency and comprehensive oral health care which is patient-focused and coordinated across disciplines;
- Use advanced dental treatment modalities;
- Direct health promotion and disease prevention activities;
- Function effectively in hospital and non-hospital health care environments;
- Function effectively as members of multi-disciplinary teams;
- Apply scientific principles to learning and oral health care, which entails thinking critically, making evidence/outcomes-based clinical decisions, and utilizing technology-based information retrieval systems;
- Engage in research, scientific writing, and presentations in order to advance dental medicine;
- Adopt a system of values that emphasizes lifelong learning, patient-centered care, exercise of professional ethics, adaptability, and acceptance of cultural diversity among patients and colleagues;
- Understand public oral health needs and practice community service.

While in the program, residents receive UPMC Health System's postgraduate trainee stipend. Those interested in making application to the program may do so through the American Dental Education Association's Postdoctoral Application Support Service (PASS).

For additional information, please visit dental.pitt.edu/gpr

The advanced education in general dentistry program is accredited by the Commission on Dental Accreditation (CODA). The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653, or at 211 East Chicago Avenue, Chicago, IL, 60611. The Commission's web address is http://www.ada.org/100.aspx.

Oral and Maxillofacial Pathology

The School of Dental Medicine Department of Diagnostic Sciences Residency Program in Oral and Maxillofacial Pathology is a 3-year residency certificate program offered through the University of Pittsburgh Medical Center Medical Education (UPMCMEE). This program is fully accredited by the Commission on Dental Accreditation. The program will accept a maximum of two residents a year. Successful completion of the program will lead to a certificate in Oral and Maxillofacial Pathology and will qualify the graduate to sit for the specialty board examination in Oral and Maxillofacial Pathology.

Curriculum

Faculty members are certified by their specialty boards of Oral and Maxillofacial Pathology, Oral and Maxillofacial Radiology, Oral Medicine, or Anatomic Pathology, and possess a wide range of clinical, teaching, research, and surgical pathology experience. The residency program offers a mix of didactic courses, electives, microscopic general and oral pathology, clinical oral pathology, oral and maxillofacial radiology, head and neck pain, hospital rotations, and research. Clinical patients are seen at the University of Pittsburgh School of Dental Medicine and though the faculty practice plan at the University Dental Health Services, Inc., as well as during the rotation in dermatopathology.

Rotations

Most pathology rotations take place at UPMC-Presbyterian Hospital, in the Oakland section of Pittsburgh, across the street from the University of Pittsburgh School of Dental Medicine. UPMC is a major regional, tertiary care and transplant center that will expose the resident to a large volume and a wide variety of experiences. Rotations include three 4-week rotations in head and neck anatomic pathology, 6 weeks in dermatopathology, 4 weeks in hematopathology-lymph node, 2 weeks in immunopathology, and 2 weeks in autopsy, with additional opportunities in gastrointestinal pathology ("GI quicks"), thoracic pathology, bone and soft tissue pathology, pediatric pathology, and molecular pathology. The program allows some flexibility for the resident to concentrate on a particular area of oral and maxillofacial pathology.

More information including requirements and making an application to the program are available by visiting dental.pitt.edu/omp-residency
The program in dental education is accredited by the Commission on Dental Accreditation (CODA). The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653, or at 211 East Chicago Avenue, Chicago, IL, 60611. The Commission's web address is http://www.ada.org/100.aspx.

Oral and Maxillofacial Surgery

The Department of Oral and Maxillofacial Surgery (OMS) at the University of Pittsburgh School of Dental Medicine offers a six-year, dual-degree program, and a four-year program. Three residents are accepted each year (two six-year positions and one four year position), and they commence training as interns in the department. In the six-year, dual-degree program, two residents join their corresponding medical school class in the spring of the first year. These residents earn a medical degree and participate in advanced surgical training in oral and maxillofacial surgery, spending a total of 33 months on the oral and maxillofacial surgery service. The four-year program offers a total of 33 months on the oral and maxillofacial surgery service and rotating on medicine, surgery and anesthesia services the other 15 months. The department's graduates have accepted positions in both outstanding surgical practices and university attending positions at major medical centers throughout the United States.

Eight full-time oral and maxillofacial surgery faculty members, as well as part-time faculty and private practice oral and maxillofacial surgeons from the Pittsburgh area, provide surgical training and mentoring. The School of Dental Medicine has, on-site, a modern ambulatory surgical suite with full anesthesia support and facilities that enhance caseload and outpatient surgical management. The department provides instruction in anesthesia, dentoalveolar surgery, dental implants, head and neck pathology, cleft and craniofacial disorders, craniofacial trauma, and head and neck anatomy.

The program is designed to be truly "integrated" and allow for the maximal benefit of coordinated medical training, and progression of knowledge and skill in oral and maxillofacial surgery. Residents are exposed to the full scope of oral and maxillofacial surgery throughout their training-including interdisciplinary care. From day one, new residents work with first professional dental students in a training and supervisory role in the undergraduate OMS clinic. They are involved in managing emergency cases at the UPMC Montefiore Dental Center and in assisting the surgical faculty in the operating rooms of UPMC Presbyterian/Shadyside, Mercy Hospital, and Children's Hospital of Pittsburgh of UPMC. During the entire final year of the program, the chief residents devote a full 12 months to the OMS service, working with an enviable surgical caseload. Residents are also required to attend the Department of Oral and Maxillofacial Surgery Grand Rounds, Journal Club, treatment planning conferences in the Dentofacial Deformities Program (in conjunction with the Orthodontic Program), and the weekly Surgical Treatment Planning and Trauma Conference.

Application

The annual application deadline is September 1 of the preceding year. Late applications will not be accepted. Applicants must graduate from an ADA-accredited dental school, must apply through the ADEA Postdoctoral Application Support Service (PASS), and must participate in the Postdoctoral Dental Matching Program (MATCH).

Interview and Selection

Applicants are screened for interviews that occur in November and December of each year. In late January, through the MATCH Program, two applicants are selected to matriculate into the first year of residency, which commences in late June. Applicants matched to the University of Pittsburgh are enrolled in both the Department of Oral and Maxillofacial Surgery residency and the University of Pittsburgh School of Medicine.

For additional information, please visit dental.pitt.edu/oms-residency

The Department of Oral and Maxillofacial Surgery adheres to the University of Pittsburgh's non-discrimination policy.

The advanced specialty education program in oral and maxillofacial surgery is accredited by the Commission on Dental Accreditation (CODA). The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation
Orthodontics and Dentofacial Orthopedics Certificate

The Orthodontics and Dentofacial Orthopedics Advanced Dental Education/Residency Program at the University of Pittsburgh School of Dental Medicine requires a three-year course of study. The goals of the program are to provide an excellent advanced education in the specialty of orthodontics and dentofacial orthopedics, to provide high quality clinical care, and to conduct research designed to advance the knowledge of the specialty. The curriculum reflects this mission and provides residents with the necessary knowledge and experience to enter the specialty well prepared for practice. The curriculum is based upon a solid foundation of scientific principles and methods that residents may use as a rational framework for understanding treatment and evaluating future changes in the specialty. The application of basic and clinical scientific knowledge to the practice of orthodontics is the fundamental tenet of the curriculum.

Successful completion of the program leads to a certificate in orthodontics and dentofacial orthopedics, and enables graduates to participate in the American Board of Orthodontics certifying examination. Students may also pursue a course of study leading to a Master of Dental Science degree in Orthodontics and Dentofacial Orthopedics.

Components of the program are:

- Clinical training which prepares the resident for specialty board certification
- Education from a broad curriculum, which provides residents with greater insight on the nature of orthodontics
- Research to enrich the profession and develop critical thinking skills

The curriculum for the Orthodontics and Dentofacial Orthopedics Residency Program is designed to be taught at the postdoctoral level. The path of study followed by the residents comprises a core curriculum of graduate level basic sciences, followed by a broad course of study in craniofacial biology, clinical sciences, and orthodontic techniques. A significant portion of the curriculum is devoted to clinical orthodontics, allowing the resident to develop proficiency through a broad, diverse experience in patient care.

Conferences provide an excellent foundation in the basic and clinical sciences and provide opportunity for study in growth and development, dental statistics, occlusion and malocclusion, development of the dentition, dentofacial abnormalities, biomechanical orthodontics, genetics, bone biology, cephalometrics, diagnosis and treatment planning, evidence-based care, surgical orthodontics, practice management, and orthodontic technique. Orthodontic conferences and literature review sessions provide opportunities for critical analysis of historical and current literature with application to contemporary orthodontic principles in case diagnosis and treatment planning.

Scholarly activity in the form of basic or clinical research is a fundamental component of the curriculum. Residents design, implement, and complete a research project that provides greater knowledge of the specialty and permit residents to develop the ability to apply the scientific method.

Applicants must apply through the Postdoctoral Application Support Service (PASS). Four residents are accepted each year, and all positions are awarded through the Postdoctoral Dental Matching Program in the Phase I (fall) match. The program is fully accredited by the Commission on Dental Accreditation.

Read more about the Orthodontics and Dentofacial Orthopedics Residency Program by visiting dental.pitt.edu/ortho-residency.

Pediatric Dentistry Certificate

The Department of Pediatric Dentistry offers a two-year residency program resulting in a Certificate in Pediatric Dentistry. Residents are trained in the advanced diagnostic and clinical techniques necessary to provide specialty care to children, adolescents, and individuals with disabilities. Residents are eligible to participate in the American Board of Pediatric Dentistry certification examinations, upon successful completion of the Program.
All facilities within the School of Dental Medicine are available for resident use, and there is a vast Health Science Center Library system housed in the medical school directly across the street from the School of Dental Medicine.

**Rotations**

Rotations are scheduled at Children's Hospital of Pittsburgh of UPMC and UPMC Presbyterian Hospital.

The following rotations are completed at Children's Hospital of Pittsburgh of UPMC:

- Pediatric Medicine
- Anesthesiology
  - Hospital Based Operating Room
  - Hospital Grand Rounds

Advanced Pediatric Dentistry residents also rotate through the Pre-doctoral Pediatric Dentistry Clinic and the Preclinical Simulation Clinic to provide instruction and clinical supervision to pre-doctoral dental students.

Applications to the Department of Pediatric Dentistry Residency Program must be filed through the Postdoctoral Application Support Service (PASS) and the Postdoctoral Dental Matching Program (MATCH).

Applications are due by **October 1** of the preceding year.

For additional information about the residency program in pediatric dentistry, including how to apply, please visit [dental.pitt.edu/pediatric-dentistry-residency](dental.pitt.edu/pediatric-dentistry-residency)

*The advanced specialty education program in pediatric dentistry is accredited by the Commission on Dental Accreditation (CODA). The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653, or at 211 East Chicago Avenue, Chicago, IL, 60611. The Commission's web address is [http://www.ada.org/100.aspx](http://www.ada.org/100.aspx).*

**Periodontics Certificate**

The residency in periodontics is a three-year certificate program. Each resident is exposed to all periodontal diagnostics and therapies and is expected to be competent in all phases of clinical periodontal care. This includes competency in implant therapy and the provision of moderate parenteral sedation. All residents are encouraged to participate in the American Academy of Periodontology board certification process, and to graduate as board-certified periodontist. A master's degree option is available to residents in the Department of Periodontics. Three residents are accepted annually for the three-year program.

Residents in the Periodontics Residency Program may elect to pursue a master of dental science degree (MDS) alongside their certificate. Eligible residents who elect this option must pass the Master of Dental Science Entrance Examination and enroll in the tract with the Pitt Registrar's Office. Please talk with the dental residency program administrator for details.

All residents must be graduates of an accredited U.S. or Canadian dental school. U.S. citizenship is not a requirement.

Applications to the residency program are accepted through the ADEA Postdoctoral Application Support Service (PASS) or the self-managed application through the Office of Residency Education (412-648-8406). Applications are due before August 1 of each year.

Learn more about the Periodontics Residency Program by visiting [dental.pitt.edu/periodontics-residency](dental.pitt.edu/periodontics-residency).

*The advanced specialty education program in periodontics is accredited by the Commission on Dental Accreditation (CODA). The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653, or at 211 East Chicago Avenue, Chicago, IL, 60611. The Commission's web address is [http://www.ada.org/100.aspx](http://www.ada.org/100.aspx).*
Prosthodontics Certificate

The Advanced Education Program in Prosthodontics is an American Dental Association-accredited three-year certificate program with the option to complete a master's degree. Students who pursue a master's degree will receive their MDS upon completion of the extra required didactic courses within the three year limit. The Program's didactic and clinical components are designed to train and equip the graduate to transfer new prosthodontic knowledge and approaches, to implement evidence-based prosthodontic decision-making in clinical practice, and to prepare for certification by the American Board of Prosthodontics.

Residents in the Prosthodontics Residency Program may elect to pursue a master of dental science degree (MDS) alongside their certificate. Eligible residents who elect this option must pass the Master of Dental Science Entrance Examination and enroll in the tract with the Pitt Registrar's Office. Please talk with the dental residency program administrator for details.

Objectives

The objectives of the residency program in the Department of Prosthodontics are to:

Provide clinical training in all aspects of prosthodontics including:

- clinical experiences to ensure proficiency in all aspects of prosthodontics;
- clinical experiences to ensure proficiency in diagnosis, treatment planning, and management of multi-disciplinary cases;
- to recruit and retain faculty with broad and varying backgrounds in clinical prosthodontics, who espouse diverse philosophies in patient care and prosthodontic procedures, and effectively communicate their knowledge and skills to residents.

Provide biologically and scientifically based education in order to:

- develop, monitor, and update all prosthodontic seminars and conferences to present contemporary, technologically, and biologically-oriented information;
- provide opportunities for scholarly activities, applied research, scientific articles, and clinical and/or research presentations.

Prepare and train residents for a career in prosthodontic practice and/or academics to:

- require all residents to complete annual comprehensive examinations (ACP Annual Board Review Examinations);
- provide opportunities for completion of a treatment case suitable for presentation to the American Board of Prosthodontics;
- provide residents with opportunities to pursue academic degree(s) in related disciplines.

Provide quality and professional care to all patients to:

- ensure ethical and professional conduct by all individuals involved in patient care;
- ensure proper care of all patients in the prosthodontic residency program;
- ensure patient satisfaction with the care they receive.

Program Requirements

The program's clinical components focus on diagnosis, treatment planning, and treatment of edentulous, partially edentulous, and completely edentulous patients. Fixed, removable, and implant prosthodontics constitute the major portion of the clinical training, with occlusion, temporomandibular disorder, and geriatrics as integral components of all phases of care. Residents are required to manage and treat patients requiring complete dentures, removable partial dentures, fixed partial dentures, and implant restorations. Clinical training for residents in implant dentistry emphasizes all aspects of implant treatment including implant placement. Additionally, the program requires the resident's involvement in the treatment of patients with congenital and acquired defects.

To learn more about the Residency Program in Prosthodontics, please visit dental.pitt.edu/prosthodontics-residency
The advanced specialty education program in prosthodontics is accredited by the Commission on Dental Accreditation (CODA). The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653, or at 211 East Chicago Avenue, Chicago, IL, 60611. The Commission’s web address is http://www.ada.org/100.aspx.

Oral Biology Program (MS and PhD)

The School of Dental Medicine Department of Oral Biology Graduate Program offers basic, translational, and clinical studies in oral biology, biomedical research and health that span spatial scales from the molecular and cellular levels to the whole organism level. Studies include fundamental biological phenomena related to the development, structure, and function of the craniofacial region and the development of new therapies, biomaterials, and diagnostic tools for the treatment of diseases and disorders in the craniofacial area. The Graduate Program provides a stimulating and collegial environment to prepare motivated and qualified students for careers in academia, industry, and government.

Students may earn Doctor of Philosophy (PhD) and Master of Science (MS) degrees in Oral Biology within one of two research concentrations:

- Craniofacial and Dental Genetics
- Craniofacial Tissue Regeneration

Students will work with faculty in the Department of Oral Biology on research in these concentrations.

The program is open to post-baccalaureate students, pre-doctoral dental students, and dental residents. School of Dental Medicine pre-doctoral students and residents may apply for a dual degree option with the PhD or MS Graduate Programs in Oral Biology. Pre-doctoral dental medicine students may also pursue dual degrees while enrolled in the School of Dental Medicine through collaborative programs with the Graduate School of Public Health, the School of Law, and the School of Education.

Admissions will only be considered for the fall term. However, early applications are encouraged, and offers may be extended to suitably qualified candidates before the application deadline.

To read detailed information about the program options as well as how to apply, please visit dental.pitt.edu/oral-biology-academic-programs.

About the School

Established in 1896, the University of Pittsburgh School of Dental Medicine has been educating students to take their places among the best dental practitioners, researchers and educators in our region, across the country, and even around the world. We are one of six Schools of Health Sciences at the University and are the only school to manage our own clinic. Our accomplishments reflect the dedication and success of each member of the School of Dental Medicine family.

We are proud of our long tradition as innovators in dental medicine. Our first female student was admitted 117 years ago, and today more than half of our vibrant and diverse first-year pre-doctoral class are women. We nurture in our students a strong foundation in the biological, behavioral and clinical sciences and a belief in the importance of professionalism and life-long learning.

Half a century ago we pioneered the specialty dental care that we now deliver in our fully equipped Center for Patients with Special Needs. The School's general dental clinics and 11 specialty clinics play an integral role in improving the oral health of the patient population of southwestern Pennsylvania and beyond. Some patients travel hundreds of miles to access the high-quality care our clinics provide every day.

Our researchers expand the horizons of knowledge and are internationally renowned for their groundbreaking developments in the areas of craniofacial genetics and craniofacial regeneration. We are identifying genes that contribute to complex human phenotypes, and are using tissue engineering to heal wounds and restore function and appearance to defects of the face and skull. Every day, the positive contributions of our faculty, staff, residents and students—the Pitt Dental Medicine family—demonstrate their commitment to our mission of advancing the future of dental medicine through teaching, research and service.

Degree Programs

Along with several specialized degree programs, degrees offered at the School of Dental Medicine include the doctor of dental medicine (DMD); doctor of philosophy (PhD); master of science (MS); master of public health (MPH) offered in conjunction with the Graduate School of Public Health; and bachelor of science (BS).
The four-year doctor of Predoctoral (DMD) Program prepares students to provide comprehensive care to a diverse patient population. The competency-based curriculum emphasizes health promotion and disease prevention, and prepares students to provide individualized treatments using the best scientific evidence available. Graduates are equipped to practice as independent, entry-level general practitioners.

The Advanced Standing (DMD) Program places qualified graduates of foreign dental schools as third-year dental students. These students are integrated into the program and complete the third- and fourth-years of the pre doctoral curriculum with the rest of the class.

In collaboration with Pitt Public Health, the four-year DMD/MPH in dental public health offers customizable course selection with a special emphasis on oral health-specific public health issues.

The University of Pittsburgh School of Dental Medicine's Dental Hygiene Program provides students a unique academic environment where they can earn either an Associate of Science or a Bachelors Degree in Dental Hygiene. The interprofessional educational experiences within the school's specialty dental clinics and the University-based hospitals, in conjunction with didactic, community outreach, and research activities, affords the delivery of high-quality education.

Research Strengths

Research efforts include dental and craniofacial genetics, craniofacial anomalies, caries, periodontal disease, pharmacology, pain control, tissue engineering, craniofacial regeneration, educational research, informatics, and implantology.

Identification
The School of Dental Medicine is undertaking investigations to identify genes that contribute to complex human phenotypes, primarily those involved in dental and craniofacial disorders, including behavioral and epidemiological factors. New territory is being charted to develop the first-known collection of DNA samples paired with anonymized dental records to support genetics research.

Treatment
Tissue engineering-based approaches are being developed to treat complex multi-structural wounds and defects of the face and skull in a way that restores both function and appearance. The school is at the forefront of research to develop relevant translational treatment solutions usable by practicing dentists.

Application
The School of Dental Medicine is identifying factors that lead to oral health disparities in children and families in Appalachia. Oral public health research leads to improved interventions, understanding, and advancements for the future of oral health education and treatment.

Oral Biology, PhD Program

The PhD Program requires approximately four to five years to complete and employs a curriculum which is separate from the MS Program. Students may enter the PhD program directly following their undergraduate degree and do not necessarily have to earn a master's degree first. Earning a master's degree can be incorporated into the PhD program without increasing the total length of time in studies.

Requirements for the PhD degree (a total of 72 credits of coursework; 50 didactic and 22 research)

- Scientific ethics/fundamentals of research course;
- Quantitative methods and design course(s) (two for students in the Craniofacial Genetics Tract);
- Written comprehensive examination after the sixth semester (for advancement to PhD candidacy);
- Dissertation proposal defense;
- Approval of a Dissertation Committee and dissertation research; and
- Dissertation defense.

Students must maintain a minimum cumulative GPA of 3.0 in required courses to be eligible to take the comprehensive examinations, as well as to graduate.

Fall Term First Semester

- ORBIOL 3503 - ORAL, TISSUES AND EMBRYOLOGY
- ORBIOL 3504 - JOURNAL CLUB
- ORBIOL 3516 - FOUNDATIONS OF SUCCESSFUL CAREER PLANNING AND DEVELOPMENT PART 1
- ORBIOL 3551 - FOUNDATIONS IN DEVELOPMENT, GENETICS AND BIOCHEMISTRY
- ORBIOL 3552 - FOUNDATIONS IN STATISTICS, RESEARCH DESIGN, AND CRITICAL THINKING
- ORBIOL 3555 - GENERAL EMBRYOLOGY & CRANIOFACIAL ORGANOGNESIS
- ORBIOL 3505 - DIRECTED RESEARCH

Spring Term Second Semester

- ORBIOL 3504 - JOURNAL CLUB
- ORBIOL 3546 - FOUNDATIONS OF SUCCESSFUL CAREER PLANNING AND DEVELOPMENT PART 2
- ORBIOL 3553 - FOUNDATIONS IN GENETIC EPIDEMIOLOGY
- ORBIOL 3554 - FOUNDATIONS OF CRANIOFACIAL ANATOMY
- ORBIOL 3555 - GENERAL EMBRYOLOGY & CRANIOFACIAL ORGANOGNESIS
- ORBIOL 3505 - DIRECTED RESEARCH

Summer Term Third Semester

- INTBP 2290 - SCIENTIFIC ETHICS AND THE RESPONSIBLE CONDUCT OF RESEARCH
- ORBIOL 3504 - JOURNAL CLUB
- ORBIOL 3505 - DIRECTED RESEARCH

Fall Term Fourth Semester

- ORBIOL 3603 - HUMAN GROWTH AND DEVELOPMENT
- ORBIOL 3505 - DIRECTED RESEARCH

Spring Term Fifth Semester

- ORBIOL 3508 - CURRENT TOPICS IN ORAL HEALTH RESEARCH
- ORBIOL 3505 - DIRECTED RESEARCH
- ORBIOL 3602 - TMJ REGENERATION AND MECHANICS
- ORBIOL 3509 - COMPOSITION, STRUCTURE, AND FUNCTION OF MINERALIZED TISSUES
- ORBIOL 3512 - CRANIOFACIAL GENETICS

Summer Term Sixth Semester

- ORBIOL 3505 - DIRECTED RESEARCH

Fall Term Seventh Semester

- ORBIOL 2110 - TEACHING PRACTICUM
- ORBIOL 3505 - DIRECTED RESEARCH

Spring Term Eighth Semester

- ORBIOL 3505 - DIRECTED RESEARCH
Summer Term Ninth Semester

- ORBIOL 3505 - DIRECTED RESEARCH

Following Terms Tenth through Twelfth

- ORBIOL 3510 - DISSERTATION RESEARCH

Oral Biology, MS Program

The MS Program requires about two years, but no longer than four, to complete. It is distinct from the PhD Program. MS students may apply to be accepted for the PhD Program once they are accepted into the MS program. If the student is accepted into the PhD program at a later date, courses taken toward the MS will satisfy doctoral degree credit and residency requirements.

Requirements for the MS Degree

- Total of 30 credits (28 didactic and 2 in research);
- Successful completion of core curriculum
- Scientific Ethics/Fundamentals of Research course;
- Quantitative methods and design course(s);
- A one-year research project leading to an master's thesis;
- Defense of the master's thesis before a thesis committee research; and,
- A master's thesis.

Students must successfully complete the first-year required curriculum and receive a grade of B, or better, in all required courses.

A student who earned a master of science degree from another institution may petition the Graduate Studies Committee to waive the preliminary examination.

Fall Term First Semester

- ORBIOL 3503 - ORAL, TISSUES AND EMBRYOLOGY
- ORBIOL 3504 - JOURNAL CLUB
- ORBIOL 3516 - FOUNDATIONS OF SUCCESSFUL CAREER PLANNING AND DEVELOPMENT PART 1
- ORBIOL 3551 - FOUNDATIONS IN DEVELOPMENT, GENETICS AND BIOCHEMISTRY
- ORBIOL 3552 - FOUNDATIONS IN STATISTICS, RESEARCH DESIGN, AND CRITICAL THINKING
- ORBIOL 3555 - GENERAL EMBRYOLOGY & CRANIOFACIAL ORGANOGENESIS
- ORBIOL 3505 - DIRECTED RESEARCH

Spring Term Second Semester

- ORBIOL 3504 - JOURNAL CLUB
- ORBIOL 3546 - FOUNDATIONS OF SUCCESSFUL CAREER PLANNING AND DEVELOPMENT PART 2
- ORBIOL 3553 - FOUNDATIONS IN GENETIC EPIDEMIOLOGY
- ORBIOL 3554 - FOUNDATIONS OF CRANIOFACIAL ANATOMY
- ORBIOL 3555 - GENERAL EMBRYOLOGY & CRANIOFACIAL ORGANOGENESIS
- ORBIOL 3505 - DIRECTED RESEARCH

Summer Term Third Semester
Fall Term Fourth Semester

- ORBIOL 3505 - DIRECTED RESEARCH

Spring Term Fifth Semester

- ORBIOL 3508 - CURRENT TOPICS IN ORAL HEALTH RESEARCH
- ORBIOL 3505 - DIRECTED RESEARCH

Summer Term Sixth Semester

- ORBIOL 3511 - THESIS RESEARCH

All Residency Programs Core Courses

Schedule for Graduate Studies Core Didactic Series (*=Required)

First Year

Summer Term Session II

- DENT 2150
- DENT 2130*
- CDENT 2113*
- DIASCI 2191
- DIASCI 2110
- DSPHL 2243*
- PERIO 2114

Fall Term

- CDENT 2114
- DSANE 2242
- DIASCI 2140
- DIASCI 2142

Spring Term

- DSANE 2114*

Second Year

Fall Term

- PROSTH 2211*
- ODO 2117

Spring Term

- ODO 2140
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To view a complete faculty directory, please visit dental.pitt.edu/people.
School of Education

Mission

The mission of the School of Education is to create and disseminate knowledge that improves teaching and learning, and to develop and implement effective programs for the preparation of education professionals who will enhance both the practice and outcomes of education.

The School of Education is primarily a graduate school that offers certificate and certification programs and masters and doctoral degree programs. All certificate and certification programs are offered at the graduate level only.

Contact Information

Office of Admissions and Enrollment Services
School of Education
5500 Wesley W. Posvar Hall
412-648-2230
Fax: 412-648-1899
E-mail: soeinfo@pitt.edu
www.education.pitt.edu

Admission

Admission Procedure

Faculty members in the program to which the student applies evaluate the applicant's credentials and recommend admission for those applicants meeting the criteria set by the program.

Approved applicants will be notified of their admission for a specific term and asked to indicate whether or not they accept the offer of admission. Should they be unable to register for courses for the term specified in their admission letter, they should notify the Office of Admissions and Enrollment Services. Approved applicants may defer admission for up to one year from the term specified in their admission letter. Approved applicants unable to register for courses within one year of the term specified in their admission letter must reapply for admission.

Changing Programs for Graduate Study

A student wishing to change programs for graduate study must file a new application for admission, noting the request for the change, in the Office of Admissions and Enrollment Services. All work taken both in undergraduate and graduate study will be reviewed by the program to which the student is applying before a decision will be made about admission to the new program. Any change from one program to another in the School of Education while the student is on active status will not alter that status. Thus, the student must register within the dates set for continuing active students.

Financial Assistance

Financial assistance is available to graduate students through graduate student assistantships (GSA), teaching assistantships (TA), teaching fellowships (TF), graduate student researchers (GSR), a variety of scholarships and fellowships, and loan programs. GSA, TA, TF, and tuition scholarship awards are primarily merit-based. GSA, TA, and TF awards provide a stipend and tuition in return for carrying out assigned duties. (See Teaching and Research Appointments under Financial Aid for further detail.) Other merit-based scholarships and fellowships established through gifts or grants both within and outside the University are also available to students.
Advising

Each student is assigned an academic advisor at the time of admission to a program. All course work scheduled must be approved by the academic advisor, who assists in the preparation of a student's plan of studies and who regularly meets with the student to review the student's academic progress. Most School of Education faculty members are not in residence from May until late August. Thus, students should consult with their academic advisors prior to the end of the Spring term to complete registration forms for the upcoming Summer and Fall terms.

Each graduate student who is completing a master's thesis or doctoral dissertation selects a research advisor to provide guidance during the conduct of the thesis or dissertation research. The research advisor may be the same faculty member as the academic advisor or another faculty member. Whatever the case, the faculty member's consent to serve as the research advisor must be formally obtained. A student continuing from a master's program involving a thesis to a doctoral program may select a different research advisor to provide guidance for the doctoral dissertation.

The student, the advisor, the program, or the department may initiate a change of the academic advisor or the research advisor. Any such change must be made according to applicable departmental policy. Notification of such a change must be sent to the student, to the new and former advisors, and to the Office of Admissions and Enrollment Services.

Commonwealth Teacher Education Certification Programs

Teacher education certification programs are offered in both general and special education.

Option 1. Initial Certification - Available for Primary Plus PreK-4, Teacher of Students with Visual Impairments (TVI) PreK-12, secondary content areas - Math, English, Science and English Education 7-12 and Foreign Language (K-12). These programs result in eligibility for a teaching certification without a graduate degree.

Option 2. Certification Plus a Graduate Degree - for students seeking initial general or special education teacher certification along with a master's degree (e.g., Master of Arts in Teaching [MAT] or Master of Education [MEd]).

Option 3. Dual certification (MOSAIC/CASE) e.g. Secondary Certification and 7-12 special education; PreK-4 and preK-8 special education.

Option 4. Additional Field Certification - for students already certified in one or more teaching fields who are seeking teacher certification in an additional specialty area but who are not pursuing a graduate degree.

Advanced certification programs include:

- Supervisory Certification (e.g., Curriculum and Supervision, Special Education)
- Endorsement (e.g. Autism Endorsement)
- Educational Specialist Certification (e.g., as a reading specialist, TVI, Special Ed Teacher Prep.)
- Administrative Certification (e.g., as a principal, superintendent)

University certificates are awarded to non-degree students who complete commonwealth teacher education certification programs offered in instruction and learning (certificates in teaching or reading specialist) and in administrative and policy studies (certificates in educational administration or educational supervision). Students in these programs must apply for graduation at the beginning of the term in which they expect to complete their programs. Eligibility for the University certificate is verified at the same time that a student's application for commonwealth certification is endorsed by the School of Education and sent to the Pennsylvania Department of Education in Harrisburg.

In addition, a University certificate in orientation and mobility is awarded from the Department of Instruction and Learning to non-degree students receiving vision study certification through the Academy for Certification of Vision Rehabilitation and Education Professionals.

Teacher education certification programs and advanced certification programs are described further in the sections for the departments that offer those programs.

Option 5. Joint Program - Available for students in the MSW/CAST program are eligible for an initial teaching certificate secondary content areas - Math, English, Science and English Education 7-12 and Foreign Language (K-12) paired with and a Masters Degree in Social Work (MSW).
Commonwealth Teacher Education Certification Regulations

The following section details regulations pertaining to the school's teacher education certification programs.

Instructional I and II Certification

The Instructional I, or provisional, certificate is issued by the Pennsylvania Department of Education (PDE) to applicants who:

- possess a baccalaureate degree with a 3.0 grade point average;
- have successfully completed a PDE-approved teacher certification program;
- pass all required PRAXIS, PECT and/or PAPA Examinations; and
- are recommended for certification by the college or university offering the PDE-approved teacher certification program.

An Instructional I certificate is valid for six years.

The Instructional II, or permanent, certificate is issued by PDE to applicants who have completed all of the following:

- A PDE-approved induction program for beginning teachers.
- Three years of satisfactory teaching in the field specified on an Instructional I certificate, attested to by the chief school administrator of the approved public or non-public school in Pennsylvania in which the most recent service of the applicant was performed.
- Twenty-four credit hours of post-baccalaureate study or in-service courses approved by PDE. (Some credits earned beyond the baccalaureate degree in teacher education study at the University of Pittsburgh may be used to satisfy this requirement.)

Applicants already holding the Instructional I certificate who are seeking admission to the School of Education in pursuit of Instructional II certification may be admitted under special graduate status. Applicants desiring to combine Instructional II certification with a master's or doctoral degree must apply for admission to an academic program offering the desired degree.

Additional Field Certification

The School of Education offers additional field certification study opportunities to students already holding a Pennsylvania Instructional I or Instructional II certificate. Students must complete major field prerequisites, course work in the subject area pedagogy, and an advanced teaching practicum (modified student teaching) and pass the PRAXIS or PECT Examination specialization test in the additional area. They must also successfully complete a PDE 430 in the additional area. Individuals who possess an Instructional II certificate and who complete requirements for an additional certification area will receive Instructional II certification in the additional certification area.

Grade Point Average/Academic Probation

All students enrolled for teacher education study are required to maintain a grade point average (GPA) of at least 3.00. The cumulative GPA is based on all course work taken after enrollment for teacher education study. A student is automatically placed on academic probation when the cumulative GPA, exclusive of transfer credits, falls below 3.00. No student on academic probation is permitted to participate in student teaching, a teaching internship, or an advanced teaching practicum. Although the credits allowed for acceptable work completed elsewhere by transfer students count toward the total number of credits required for teacher education study, the grades earned in such courses are not included in GPA computations, except in determining GPA's required for admission to the School of Education.

Credit Requirements

Teacher education study in the Instructional I certification program requires the satisfactory completion of a minimum of 30 credits of course work approved by the department and the school. The Master of Arts in Teaching option requires 36 credits. Credit requirements for other certification options vary. Certification by the Pennsylvania Department of Education is recommended only for those students who have satisfactorily completed all courses required for certification with at least a 3.00 GPA.

Teacher Certification Testing Program

The PAPA battery of tests, required for some students seeking their first Instructional I certificate, consists of a series of examinations to assess basic communication skills, general knowledge, professional knowledge, and specialized area knowledge. Persons with an undergraduate degree already holding a Pennsylvania Instructional I or II certificate are exempt from the PAPA series. Individuals seeking Instructional I certification in more than one area must take and pass specialization area tests in all areas in which certification is sought. Individuals seeking additional field certification must pass the PRAXIS Examination in the specialization area.
Students completing an Instructional I certificate in preK-4 education, a certificate in preK-4/preK-8 special education or a secondary/7-12 special education certificate must pass the appropriate PECT tests.

Students may take the PRAXIS Examinations at any point during or after attendance at a post-secondary institution. The tests are administered four times each year at the University of Pittsburgh. Some tests are offered every day (when the testing sites are open) while others are administered during a "testing window" which is usually a two week period, usually occurring monthly. Go to the PRAXIS website for information on registering to take the exams.

Student Teaching

In most programs, field experience in local public schools is required throughout the academic year (August to June). When a student accepts their offer of admission, they are required to complete information about student teaching. Applicants must also submit results from a tuberculin test, child abuse clearance, and criminal history check, as required by Pennsylvania Acts 33 and 34. Students must also submit results from a Federal Criminal History Record check by obtaining fingerprint results through the FBI. Lastly, students must successfully pass an online training, Protecting Children from Abuse and also read the PA Mandated Reporter law and sign to indicate understanding.

Student teaching usually begins in late August and sometimes sooner than the opening day of University classes. Specific procedures and regulations governing student teaching practicum can be found in the student teaching handbook.

Teaching Internship

Students in the Master of Arts in Teaching option must complete an academic year (August to June) teaching internship in lieu of student teaching. The internship requires a minimum of 20 hours per week in the Fall term and 30 hours per week in the Spring and Summer terms. To qualify for the internship and the Pennsylvania Teacher Intern certificate, applicants must:

- As required by Pennsylvania Acts 33 and 34 submit the following clearances: Federal Criminal History Record; Pennsylvania State Criminal Record Check; Pennsylvania Child Abuse History Clearance. If there is a criminal infraction on any of these clearances, school placement for the school is unlikely, which will require the student to withdraw from the class. The University cannot guarantee that a person with entries in their criminal record will be permitted to do assignments in a school. While State law bars certain offenders from schools, districts often impose more extreme requirements. Students who have entries in their records should consult the Coordinator of Clinical Practice on whether a placement will be likely
- pass the Content Knowledge test (Praxis II) during the first semester of their program in order to obtain their Intern Certificate
- satisfy the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the national PRAXIS II Exam, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and in the internship)

Students must also submit results from a Federal Criminal History Record check by obtaining fingerprint results through the FBI. Lastly, students must successfully pass an online training, Protecting Children from Abuse and also read the PA Mandated Reporter law and sign to indicate understanding.

Advanced Teaching Practicum

Students in the additional field certification option must complete an advanced teaching practicum, (modified student teaching experience) which vary based on the program requirements. Students must file an application for advanced teaching practicum in the Office of Teacher Education, 5300 Wesley W. Posvar Hall, during the term prior to the practicum. Specific guidelines governing advanced teaching practicum are available in the Office of Teacher Education, 5300 Wesley W. Posvar Hall.

Master's Degree Requirements

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Common Requirements

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.
Acceptance of Transfer Credits

For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.

A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Academic Regulations:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

Grade Point Average/Academic Probation

All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

Statute of Limitations

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year to may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures
at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Plan of Studies

Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.

Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.

Basic Areas of Education Requirement

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.

Psychological Perspectives on Education

EDUC 2000 Psychology of Learning and Development for Educators
EDUC 2007 Human Learning
EDUC 2008 Conception to Early Childhood in Social Context
EDUC 2009 Development: Middle Childhood/Adolescence

Social and Cultural Perspectives on Education

EDUC 2100 Education and Society
EDUC 2102 History of Education
EDUC 2103 Race and Racism in Education and Society
EDUC 2104 Leadership for Service-Learning
EDUC 2105 Sociology of Education
EDUC 2106 Education and Culture
EDUC 2107 Evidence Based Health Program Planning
EDUC 2108 State/National Politics of Education
EDUC 2109 Anthropology of Education
EDUC 2110 Gender and Education
EDUC 2111 Contemporary Philosophy of Education
EDUC 2112 Politics and History of Higher Education
Research Methods

EDUC 2200 Disciplined Inquiry*

EDUC 2201 Introduction to Research Methodology

EDUC 2202 Educational and Psychological Measurement

EDUC 2205 Field Methods

*Enrollment limited to MAT students

Master's Comprehensive Examination

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or department to which the student has been admitted. Procedures and schedules of administration are available from the program or department. *The student must be enrolled to take the comprehensive examination.

*See also "Master of Arts and Master of Science Degrees" - "Comprehensive Examination" under Regulations Pertaining to Master's Degrees. The University-wide regulations on comprehensive examinations detailed there apply to all School of Education master's programs.


Some MA and MS degree programs within the School of Education are offered with a thesis requirement while others are offered with the option of completing either a thesis or a thesis equivalent. All MAT degree programs and some MEd programs require the completion of a research paper.

Master's Degree with Thesis

The master's degree with thesis is intended for graduate students who have pursued advanced graduate study in at least one field of education specialization and have demonstrated through the master's thesis the capability to plan and carry through a project of original research. The plan of studies should include at least 6 credits in thesis work.

Thesis Overview

The thesis overview is a written proposal for the thesis. The overview is presented to the master's committee, which consists of a minimum of three faculty members (at least one from another program or department) selected in consultation with the student by the research advisor and approved by the department. The student must submit a form for approval of the thesis committee. A student must be registered in the term during which the thesis overview meeting is scheduled. A unanimous vote of the master's committee is required for approval of the overview. The outcome of the overview meeting is submitted on the appropriate form along with a corrected copy of the overview to the Office of Admissions and Enrollment Services.

Approval of Research with Human Subjects

If the research proposed in the overview involves human subjects, the proposed research must be approved by the University Institutional Review Board (IRB) for the Protection of Human Subjects before it may be carried out. Information on materials that must be submitted and the procedures that must be followed for an IRB review are available in departmental offices and the Office of Admissions and Enrollment Services.

Advancement to Master's Candidacy

To be advanced to candidacy for the master's degree with thesis a student must:

- be admitted to full graduate status;
- have a minimum grade point average of 3.00 (transfer credits not considered);
- have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
- have passed the comprehensive examination;
- have an approved overview on file in the Office of Admissions and Enrollment Services; and
• if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.

Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.

Final Oral Examination

The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper

Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements

Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

Doctoral Degree General Requirements (EdD and PhD)

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Doctoral Programs

Doctor of Education (EdD) and Doctor of Philosophy (PhD) degree programs are offered by the School of Education to provide advanced graduate study and professional specialization in education. Each recipient must show evidence of superior scholarship, mastery of a special field of knowledge, and ability to do significant and relevant research. In doctoral study in the School of Education, a distinction is made between the preparation of education professionals resulting in the EdD degree and the preparation of education professionals resulting in the PhD degree. While EdD and PhD degrees produce experts in critical inquiry, the School of Education distinguishes the degrees according to, among other factors, the focus of the area of inquiry, the type of knowledge advanced, and the career path chosen by the individual student.

PhD research focuses on the study of basic problems arising primarily from behavioral and social science theory with the goal of advancing such theory and knowledge. Individuals pursuing this degree often seek academic positions in universities or research institutes. EdD research focuses on the study of applied, practical problems with the goal of contributing to solutions. Careers for these individuals often center on professional positions as administrators, curriculum developers, or specialists in schools and clinical settings.

Credit Requirements

Doctoral degrees require a minimum of 90 credits in a degree program beyond the baccalaureate, distributed as follows: a minimum of 72 course credits (including transfer credits) and a minimum of 18 dissertation credits. Doctoral-level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study. Generally, courses numbered below 2000 do not meet the minimum
requirements for doctoral study. Exceptions require the approval of the program or department. No lower-level undergraduate course (numbered 0001-0999) may be applied toward a doctoral degree.

**Grade Point Average/Academic Probation**

All students enrolled in doctoral degree programs are required to maintain a grade point average (GPA) of at least 3.300. The cumulative GPA is based on all course work taken after enrollment in the appropriate doctoral program. A student is automatically placed on academic probation when the cumulative GPA after 9 credits or more, exclusive of transfer credits, falls below 3.300. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.500 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

**Leave of Absence**

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of two years may be granted to doctoral students. The length and rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

**Academic Integrity Policy**

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

**Doctor of Education Specific Requirements**

The three-year structured EdD program is built on a cohort model and is goal driven. The cohort of students admitted complete a three-year 90-credit program, which includes 30 credits transferred from a relevant master's degree.

While a vast majority of EdD experiences are shared (common coursework, internship experiences, and common outcome metrics) students pick one of the following areas of concentration:

1. Education Leadership
2. Health & Physical Activity
3. Higher Education Management
4. Language, Literacy & Culture
5. Out of School Learning
7. Social and Comparative Analysis in Education
8. Special Education

EdD students take eight core courses (24 credits). This includes four courses (12 credits) focused on building foundational knowledge and four courses (12 credits) specifically focused on research and methodology. Candidates will also develop specialized knowledge in their area of
concentration through course projects, relevant internships, and four 3000 level courses (12 credits). Students take six credits each term, making them part time students throughout the duration of the program.

Coursework will be offered by alternative delivery models. Week-long intensive on-ramp experiences, hybrid seminars, week-long intensive institutes, cross-disciplinary research seminars, and aspirant internships are available. Integrating diverse learning environments offers a range of structures and opportunities for doctoral students and faculty to form and access "communities of practice" face-to-face in a classroom or via CourseWeb (discussion boards, wikis, blogs, Skype, FaceTime, Google Hangouts, etc.). Communities of practice are intentionally created collaborative learning environments that extend and enrich intellectual discourse within a socially constructed space. This flexible structure is especially important for part time doctoral students to thrive as scholarly practitioners.

A school-wide EdD admissions Committee reviews all applications for the EdD degree program. The prospective concentration advisor also reviews the application to affirm the match between student and faculty interests. A 3.5 master's GPA is recommended and GRE scores are not required. For international students a TOEFL score of 100 on the internet-based test with a minimum of 21 on each subtest, 240 on the computer-based test, or 600 on the paper-based test. Interviews will be conducted.

**Plan of Studies**

Prior to advancement to the formal stage called Doctoral Study, the student, in consultation with the academic advisor, must complete a plan of studies that conforms to program requirements. The plan of studies, approved by the academic advisor, the program coordinator, and department is filed in the Office of Admissions and Enrollment Services.

The EdD program requires that students file a Plan of Studies during the fall semester of their first year in the program. In formulating the doctoral Plan of Studies, both the student and the academic advisor must pay close attention to these School of Education requirements as well as requirements specific to the particular program or department in which the degree specialization is taken. It is the responsibility of the student to learn particular requirements from the academic advisor. The completion of requirements for the doctorate must be satisfied through registration at the University of Pittsburgh.

**Course Requirements**

A doctoral Plan of Studies should include the following degree requirements:

- **EdD Foundations Courses (12 credits)**
- **EdD Practitioner Inquiry Courses (12 credits)**
- **Area of Concentration Courses (12 credits)**
- **Additional Area of Concentration Courses (21 transfer credits)**
- **Supporting Field (9 transfer credits)**
- **Supervised Practitioner Inquiry and Internship (6 credits)**
- **Dissertation in Practice (18 credits)**

All EdD students will complete eight common core courses: four EdD Foundations Courses (12 credits) and four EdD Practitioner Inquiry Courses (12 credits) designed specifically for EdD students and aligned with the milestones and requirements of the program. In addition to the eight common courses, students take four courses in their area of concentration. Each area of concentration has specified the courses which fulfill this requirement.

Courses approved for transfer credit must be listed individually on the plan of studies. Any changes in the plan of studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed with the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved plan of studies.

**Supervised Practitioner Inquiry and Internship**

EdD students are required to complete 3 credits of Supervised Practitioner Inquiry and 3 credits of Supervised Internship.

Students in enroll in Supervised Practitioner Inquiry in order to prepare a critical review of literature related to a problem of practice that students identify in consultation with their advisors. Successful completion of this course constitutes completion of the comprehensive examination (as explained below). Supervised Practitioner Inquiry is designed to evaluate students' strengths, weaknesses, motivations, and potential for acquiring in-depth knowledge of education issues in the declared area of study and to assess students' ability to write clearly. The Supervised Inquiry requirement is designed to assure that each doctoral student successfully completes a review of literature on a problem of practice that builds on the content in the foundations and area of concentration courses. Students work directly with their advisors to complete the review of literature.
There are three types of Supervised Internship experiences that students may complete:

1. **Job-embedded internship.** Students already working in their field of choice may elect to have their current responsibilities reviewed for eligibility for a "full-time job-embedded internship." If the advisor and student agree that the students' current responsibilities represent a relevant and meaningful internship experience, then a plan will be developed that will engage the student in analysis of practice and leadership activities.

2. **Aspirant internship.** Students will have an apprenticeship experience in which they shadow and collaborate with a trained mentor in their discipline.

3. **Global studies experience:** Students will have the opportunity to design an international experience that provides direct observation or experience with practice or policy in another country.

The Supervised Internship experience allows students to integrate learning that has occurred across multiple experiences and courses throughout the program as well as previous professional expertise.

**Acceptance of Transfer Credits**

EdD students apply a maximum of 30 post-baccalaureate credits for transfer from other institutions in keeping with University-wide requirements (see Acceptance of Transfer Credits). Both applicants for admission and continuing University of Pittsburgh doctoral students seeking acceptance of transfer credits toward a doctoral degree must submit their transcripts with a completed "Course Credits Accepted" form, available on the School of Education website. When approved, transfer credits must appear on the student's Plan of Studies. The registrar, after notification of acceptance of transfer credits, will enter the individual transfer credits on the student's transcript. Grades (and quality points) are not recorded for credits accepted by transfer.

Each course transferred must meet the following conditions:

- The course grade must be at least B (GPA=3.0) or its equivalent.
- The course must be judged relevant to a student's doctoral Plan of Studies by the program or department.
- The course must be approved for equivalent graduate degrees at the accredited institution, extension, or off-campus center of other institutions at which the course was taken.

**Residency**

The EdD program has no residency requirement.

**Statute of Limitations**

From the student's initial registration for doctoral study at the University of Pittsburgh, all requirements for the EdD must be completed within a period of 12 years (or 10 years if the student has received credit for a master's degree appropriate to the field of study).

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

**Doctoral Preliminary Evaluation**

Each doctoral student is required to take a preliminary evaluation designed to assess the breadth of the student's knowledge of the discipline, the student's achievement during the initial phase of graduate study, and the student's potential to apply research methods independently. The EdD preliminary examination is designed to assess and support the student's continued success in doctoral study. The exam consists of a written statement of a defensible problem of practice. The statement articulates the proposed topic, the significance of the problem, scope of inquiry, and questions that will be asked of the literature. This initial assessment is structured to achieve two purposes: (a) to evaluate the student's strengths, weakness, motivation, and potential for acquiring in-depth knowledge of education issues in the student's declared area of study and (b) to assess the student's ability to write clearly.

**Advancement to Doctoral Study**

To advance to doctoral study, a student must:

- be admitted to full graduate status;
- have completed at least 15 post-master's graduate credits at the University of Pittsburgh;
- have earned a GPA of at least 3.30 (transfer credits not considered) in post-master's graduate study at the University of Pittsburgh;
• have a Plan of Studies approved by the academic advisor and the program coordinator on file in the Office of Admissions and Enrollment Services; and
• have passed the doctoral preliminary evaluation.

Comprehensive Examination

The EdD Comprehensive Exam is a review of supporting scholarship and professional knowledge related to the problem of practice. The review of supporting scholarship and professional knowledge related to the problem of practice is an integrated conceptual synthesis across sources that addresses these questions: What has been done to address the problem? What has been learned about this problem? What theories, practices, policies, and contested ideas have emerged?

The review of supporting scholarship and professional knowledge is the final project for EDUC 3009 Supervised Practitioner Inquiry in the fall term of the second year of the EdD program. The advisor approves the review of supporting scholarship and professional knowledge. Evidence of advisor approval is a passing grade in EDUC 3009.

A student must be registered in the term during which the comprehensive examination is taken. In no case may the student be graduated in the same term in which the comprehensive examination is taken. After the comprehensive examination is passed, the student has the remaining time specified by the statute of limitations to complete all remaining doctoral degree requirements.

Ordinarily, students do not register for dissertation credits until they have passed the comprehensive examination.

Doctoral Competency

Each doctoral student is required to demonstrate doctoral competency by satisfactorily completing the supervised inquiry and internship and doctoral comprehensive examination. The form certifying that a student has demonstrated doctoral competency is initiated by the student's academic advisor, signed by the academic advisor, the program coordinator, and the department chairperson, and then sent to the Office of Admissions and Enrollment Services. The dean/associate dean notifies the student that doctoral competency has been demonstrated.

Dissertation in Practice

The EdD program requires a Dissertation in Practice that contributes to the improvement of practice in the student's area of specialization and reflects the application of relevant theory and knowledge.

Doctoral Committee

The EdD doctoral committee will consist of the research advisor and at least two other members, including one member from an area of concentration other than the student's primary area. This member may be from another department in the School of Education, from another department in the University of Pittsburgh, or from an appropriate graduate program at another academic institution. At least two committee members shall be full-time faculty of the School of Education (tenured, tenure stream, or non-tenure-stream), and at least one member shall be an experienced practitioner or former practitioner possessing a doctorate and having significant experience in the area of the proposed project. In general, it is expected that all committee members will have earned a doctoral degree (PhD or EdD).

The doctoral committee will decide on the acceptability of the final dissertation project submission, with each committee member signing an appropriate form and indicating whether he/she deems the project to be a pass or a failure. Students can appeal that decision only with respect to issues of academic integrity, as is the case for all course grades. Appeals shall be done informally first, through the associate dean for student affairs, with the current School policy on such appeals being followed for any further steps.

The program faculty, the department chairperson, and the dean/associate dean must approve membership on and subsequent changes in the doctoral committee. After the program has approved the doctoral committee, the research advisor initiates the "Proposed Doctoral Committee" form to obtain the signatures of the program coordinator, the department chairperson, and the dean/associate dean. The dean/associate dean must give final approval of the doctoral committee before the overview examination may be scheduled.

Dissertation Overview

The dissertation overview is a written proposal and must be presented to the doctoral committee for approval after doctoral competency has been demonstrated. The dissertation overview includes three components: the final version of the statement of problem of practice, review of supporting scholarship and professional knowledge, and applied inquiry plan. The Applied Inquiry Plan guides the development of the Dissertation in Practice. Students develop a potential solution to their problem of practice, such as an intervention or policy change and a plan to study the implementation and predicted outcomes OR collect and analyze data to identify underlying causes and associated factors related to their problem of practice.
The Overview Examination

The overview examination is conducted by the doctoral committee in September of the third year of the EdD program, is chaired by the research advisor, and is open to any faculty member of the graduate faculty of the University wishing to attend. Although any faculty member may participate in the examination, only members of the doctoral committee may be present during the final deliberation and vote on approving the overview. Each member of the doctoral committee must sign the overview form and vote on approving the overview. The committee must unanimously approve the overview in order for the student to be advanced to doctoral candidacy.

Dissertation in Practice

The Dissertation in Practice has two sections. The first section is a report that includes the following parts:

1. Statement of Problem of Practice
2. Review of Supporting Scholarship and Professional Knowledge
3. Applied Inquiry Plan
4. Summary of major findings from the enactment of the applied inquiry plan.
5. Summary of conclusions and recommendations.
6. Dissemination Plan - How will student's research impact practice? The dissemination plan frames the Demonstration of Scholarly Practice
7. References

The second section of the Dissertation in Practice is a Demonstration of Scholarly Practice, a public product that supports the advancement of students' profession, including but not limited to, publishable article in a practitioner journal, white paper, book chapter, presentation to a Board of an organization or agency, policy analysis report, policy brief, video, performance, curriculum resources, professional development plan, professional development resources, program guide, intervention manual, evaluation report, research report, and other products that further students' professional goals.

Students should review the information detailed under Dissertation and Abstract and Final Oral Examination for University-wide Regulations Pertaining to Doctoral Degrees regarding dissertations and dissertation defenses.

The Dissertation Defense

The same rules apply here as detailed under The Overview Examination above.

Vote on the Dissertation Defense

Each member of the doctoral committee must sign the dissertation defense form and vote to pass or fail the student on the dissertation defense. If the decision of the committee is not unanimous, the case is referred to the dean/associate dean for resolution.

Submission Requirements and Fees

For general information concerning preparation of the dissertation, refer to the ETD website.

At least one week prior to the end of the term, the dissertation is submitted in final form to the Office of Admissions and Enrollment Services along with the following materials:

- Signed dissertation defense form
- Signed ETD approval form
- Two copies of the dissertation abstract initialed by the research advisor
- Completed Proquest Agreement forms
- Completed Survey of Earned Doctorate form
- Receipt from the Student Payment Center for payment of the dissertation processing fee
- Two copies of the title page

Information concerning requirements for preparing the abstract, the forms to be completed, and the amount of the fees to be paid is available in the Office of Admissions and Enrollment Services. The dissertation and abstract will be examined there to see that they are prepared in an acceptable form and style. For dissertation preparation style information refer to the ETD Format Guidelines. Questions not answered in these documents regarding form and/or style will be referred to the dean/associate dean for review and final decision.
Doctor of Philosophy Specific Requirements

The Doctor of Philosophy degree in the School of Education is a research-intensive training model that prepares students to be nationally competitive for research careers in both academic and non-academic institutions.

Admissions requirements include the GRE for both national and international applicants. International students require a minimum of 100 or higher TOEFL composite score with sub-scores of 21 or higher or 7.0 IELTS with sub-scores of 6.0 or higher. After screening, a small group of applicants will be interviewed prior to a final decision. Only applicants committed to full-time study will be considered (except in unusual circumstances where the applicant works in a setting where research opportunities are available such as a research assistant on a funded project at a research institute).

The students are admitted into one of the following areas of concentration:

- Applied Developmental Psychology
- Education Leadership
- Health and Physical Activity
- Higher Education Management
- Language, Literacy & Culture
- Learning Sciences and Policy
- Mathematics Education
- Research Methodology
- Science Education
- Social and Comparative Analysis in Education
- Special Education - Early Intervention
- Special Education - Education of Students with Mental & Physical Disabilities
- Vision Studies

Plan of Studies

Prior to advancement to the formal stage called Doctoral Study, the student, in consultation with the academic advisor, must complete a plan of studies that conforms to program requirements. The plan of studies, approved by the academic advisor, the program coordinator, and department is filed in the Office of Admissions and Enrollment Services.

PhD students are required to file a Plan of Studies during the first year in the program. In formulating the doctoral Plan of Studies, both the student and the academic advisor must pay close attention to these School of Education requirements as well as requirements specific to the particular program or department in which the degree specialization is taken. It is the responsibility of the student to learn particular requirements from the academic advisor. The completion of requirements for the doctorate must be satisfied through registration at the University of Pittsburgh.

Courses approved for transfer credit must be listed individually on the plan of studies. Also, when a student plan of studies lists directed study credits, a directed study agreement form must be completed, signed by both the student and faculty supervisor, and submitted for each directed study at the time of registration. Forms are available from the department.

Any changes in the plan of studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed with the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved plan of studies.

Credit Requirements

The PhD degree requires a minimum of 90 credits in a degree program beyond the baccalaureate, distributed as follows: a minimum of 72 course credits (including transfer credits) and a minimum of 18 dissertation credits. Doctoral-level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study if approved on a plan of studies. Generally, courses numbered below 2000 do not meet the minimum requirements for doctoral study. Exceptions require the approval of the program or department. No lower-level undergraduate course (numbered 0001-0999) may be applied toward a doctoral degree. Department and program websites list specific degree requirements.

Acceptance of Transfer Credits
PhD students apply a maximum of 30 post-baccalaureate credits for transfer from other institutions in keeping with University-wide requirements (see Acceptance of Transfer Credits). Both applicants for admission and continuing University of Pittsburgh doctoral students seeking acceptance of transfer credits toward a doctoral degree must submit their transcripts with a completed "Course Credits Accepted" form, available on the School of Education website. When approved, transfer credits must appear on the student's Plan of Studies. The registrar, after notification of acceptance of transfer credits, will enter the individual transfer credits on the student's transcript. Grades (and quality points) are not recorded for credits accepted by transfer.

Each course transferred must meet the following conditions:

- The course grade must be at least B (GPA = 3.00) or its equivalent.
- The course must be judged relevant to a student's doctoral Plan of Studies by the program or department.
- The course must be approved for equivalent graduate degrees at the accredited institution, extension, or off-campus center of other institutions at which the course was taken.

The completion of requirements for the doctorate must be satisfied through registration at the University of Pittsburgh. However, under certain circumstances, a student may earn in an accredited graduate institution other than the University of Pittsburgh a limited number of credits toward a doctoral degree.

Doctoral students desiring to take courses at another institution following admission to the University of Pittsburgh should review the course descriptions and receive approval from their academic advisors and program or department prior to registering for those courses if they wish to ensure that these credits will be acceptable for transfer.

Residency

PhD students are required to be enrolled for full-time study, including involvement in research activities.

Supporting Field

PhD students are required to complete a minimum of nine credits in an academic discipline outside of education. This requirement may be met in one of three ways:

1. For a student who does not have a bachelor's degree or an equivalent number of credits to that for a bachelor's degree in an appropriate academic discipline, a minimum of 18 credits must be taken outside the School of Education in one field or in an interdisciplinary concentration (e.g., Latin American Studies or psycholinguistics) as approved by the program or department. No more than 6 of these credits may be used to satisfy research methodology requirements.

2. For a student who has a bachelor's degree or an equivalent number of credits for a bachelor's degree in an academic discipline, a minimum of 9 credits must be taken outside the School of Education in one field or in an interdisciplinary concentration as approved by the program or department. None of the 9 credits may be used to satisfy research methodology requirements.

3. For a student who has a master's degree or an equivalent number of credits toward a master's degree in a relevant academic discipline outside of education, no additional credits outside the School of Education need to be taken.

Supervised Research

PhD students are required to complete a supervised research experience that results in a written report of the experience. Enrollment for six credits of supervised research, internship, practicum, or directed study is required.

Statute of Limitations

From the student's initial registration for doctoral study at the University of Pittsburgh, all requirements for the PhD must be completed within a period of 10 years (or 8 years if the student has received credit for a master's degree appropriate to the field of study).

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

Doctoral Preliminary Evaluation

Each doctoral student is required to take a preliminary evaluation designed to assess the breadth of the student's knowledge of the discipline, the student's achievement during the initial phase of graduate study, and the student's potential to apply research methods independently. The preliminary
evaluation is administered by the program or department to which the student has been admitted. Procedures of administration are available from the program or department.

**Advancement to Doctoral Study**

To advance to doctoral study, a student must:

- be admitted to full graduate status;
- have completed at least 15 post-master's graduate credits at the University of Pittsburgh;
- have earned a GPA of at least 3.30 (transfer credits not considered) in post-master's graduate study at the University of Pittsburgh;
- have a Plan of Studies approved by the academic advisor and the program coordinator on file in the Office of Admissions and Enrollment Services; and
- have passed the doctoral preliminary evaluation.

**Comprehensive Examination**

After advancement to doctoral study, each doctoral student is required to take a comprehensive examination. The comprehensive examination is constructed, administered, and scored by the department or program to which the student has been admitted. Procedures and schedules of administration are available from the department or program.

A student must be registered in the term during which the comprehensive examination is taken. In no case may the student be graduated in the same term in which the comprehensive examination is taken. After the comprehensive examination is passed, the student has the remaining time specified by the statute of limitations to complete all remaining doctoral degree requirements. Satisfactory completion of the doctoral comprehensive examination requirement is part of the demonstration of doctoral competency.

Ordinarily, students do not register for dissertation credits until they have passed the comprehensive examination.

**Doctoral Competency**

Each doctoral student is required to demonstrate doctoral competency by satisfactorily completing the supervised research requirement and doctoral comprehensive examination. The form certifying that a student has demonstrated doctoral competency is initiated by the student's academic advisor, signed by the academic advisor, the program coordinator, and the department chairperson, and then sent to the Office of Admissions and Enrollment Services. The dean/associate dean notifies the student that doctoral competency has been demonstrated.

**Doctoral Committee**

For the PhD student, the doctoral committee consists of the research advisor and at least three other members, including one member from another department outside the School of Education at the University of Pittsburgh or from an appropriate graduate program outside education at another academic institution. The research advisor and a majority of the total committee must be full or adjunct members of the graduate faculty of the University of Pittsburgh. Current graduate faculty membership may be found on the University's Institutional Research website.

The program faculty, the department chairperson, and the dean/associate dean must approve membership on and subsequent changes in the doctoral committee. After the program has approved the doctoral committee, the research advisor initiates the "Proposed Doctoral Committee" form to obtain the signatures of the program coordinator, the department chairperson, and the dean/associate dean. The dean/associate dean must give final approval of the doctoral committee before the overview examination may be scheduled.

**Dissertation Overview**

The dissertation overview is a written proposal and must be presented to the doctoral committee for approval after doctoral competency has been demonstrated.

**The Overview Examination**

The overview examination is conducted by the doctoral committee, is chaired by the research advisor, and is open to any faculty member of the graduate faculty of the University wishing to attend. Although any faculty member may participate in the examination, only members of the doctoral committee may be present during the final deliberation and vote on approving the overview. Each member of the doctoral committee must sign the overview form and vote on approving the overview. The committee must unanimously approve the overview in order for the student to be advanced to doctoral candidacy.
Dissertation

Students should review the information detailed under Dissertation and Abstract and Final Oral Examination for University-wide regulations regarding dissertations and dissertation defenses. School of Education-specific rules follow:

The Dissertation Defense

The same rules apply here as detailed under The Overview Examination above.

Vote on the Dissertation Defense

Each member of the doctoral committee must sign the dissertation defense form and vote to pass or fail the student on the dissertation defense. If the decision of the committee is not unanimous, the case is referred to the dean/associate dean for resolution.

Submission Requirements and Fees

For general information concerning preparation of the dissertation, refer to the ETD website.

At least one week prior to the end of the term, the dissertation is submitted in final form to the Office of Admissions and Enrollment Services along with the following materials:

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Faculty

Akiva, Thomas Matthew Schweinh - PhD, University of Michigan
Ames, Theresa - Master's, University of Pittsburgh
Ansell, Ellen Sue - PhD, University of Wisconsin-Madison
Arlotta-Guerrero, Anna M - PhD, University of Pittsburgh
Arnett, Melissa Elaine - Master's, University of Maryland, Baltimore County
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Bradfield, Shanna M - Master's, Chestnut Hill College
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Brown, Meagan Martyniak - Master's, Simmons College
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Calderone, Eugene - Master's, West Virginia University
Caprini, Erica Lynn - Master's, California University of Pennsylvania
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Cho, Byeon Young - PhD, University of Maryland University College
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Correnti, Richard James - PhD, University of Michigan
Knoll, Diana M - PhD, University of Pittsburgh
Kokina, Anastasiya - PhD, Lehigh University
Kostewicz, Douglas E - PhD, Pennsylvania State University
Kucan, Linda L. - PhD, University of Pittsburgh
Lane, Suzanne - PhD, University of Arizona
Lobaugh, Catherine Skezas - EdD, University of Pittsburgh
Longo, Ralph G - PhD, University of Pittsburgh
Loughrey, Brenda M - Bachelor's, University of Pittsburgh
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McLaughlin, Kevin J - Master's, University of Pittsburgh
Meikle, Erin Meyer - PhD, University of Delaware
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Milford, Cheryl A - Master's, Western Mich University
Miller-Ferri, Theresa Yvonne - Master's, Duquesne University
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Nagle, Elizabeth - PhD, University of Pittsburgh
Newman, Lawrence Steven - PhD, University of North Carolina at Chapel Hill
Newstadt, Michelle Reicher - PhD, University of Michigan
O'Brien, Sarah Ann - Master's, University of Pittsburgh
Page, Lindsay Coleman - EdD, Harvard University
Pellathy, Stephen Louis - PhD, University of Pittsburgh
Perry, Jill Alexa - PhD, University of Maryland, College Park
Perryman, Alexandra C - Master's, West Virginia University
Petrosky, Anthony R - EdD, State University of New York at Buffalo
Plezynski, Natalie M - Master's, University of Pittsburgh
Poole, Cynthia Louise - EdD, University of Central Florida
Popovich, Cynthia June - PhD, University of Pittsburgh
Porter, Maureen K - PhD, Stanford University
Reed, Marissa Shirls - Master's, University of Pittsburgh
Renshaw, Rebecca Lyn - Master's, University of Pittsburgh
Renton, Marinne Ruth - Bachelor's, Indiana University of Pennsylvania
Robertson, Rachel E - PhD, Vanderbilt University
Rogers, Renee J - PhD, University of Pittsburgh
Rooksby, Jacob H - PhD, University of Virginia
Roop, Laura Jane - PhD, University of Michigan
Roscoe, Anthony E. - Master's, University of Pittsburgh
Ross, Sharon Elizabeth - PhD, Pennsylvania State University
Rupert, Christy Lynn - Master's, University of Pittsburgh
Russell, Jennifer Lin - PhD, University of California, Berkeley
Rykacek, Mary Beth P - Master's, University of Pittsburgh
Saikaly, Stephanie N - Master's, University of Pittsburgh
Santella, Annette - Master's, University of Pittsburgh
Sardegna, Veronica Gabriela - PhD, University of Illinois Urbana-Champaign
Saul, Antonette A - Master's, Duquesne University
Schorr, Jodi Marie - Master's, Johns Hopkins University
Program and Course Offerings

The School of Education is organized into four academic departments and one interdisciplinary degree:

Center for Urban Education

The Center for Urban Education's vision is to be a space of learning and sharing with communities to positively transform educational opportunities and experiences. CUE structures its research, service, and knowledge dissemination into three areas:

Community Partnership & Engagement

CUE is a research center, but the success of its findings, projects, and progress in influencing practice is dependent on community partnership and engagement, which it facilitates through its Community Partnership & Engagement (CPE) affinity group. CUE is grateful for its partners and collaborators, ranging from school districts and administrators to community councils and foundations, and from government contacts and offices to local and regional parent/teacher organizations.

Educator Development & Practice
The Educator Preparation & Development (EDP) affinity group works to devise, document, and deliver the tools and processes teachers and administrators need for improving urban school systems. CUE strives to be an educator training and professional development facility of the highest order for educators in the region, while developing, delivering, and documenting processes and tools that can yield major improvement in urban school systems.

**Student Academic & Social Development**

The Student Academic and Social Development (SASD) affinity group focuses on experiences and support of students at all levels. Through research, practice, and school and community partnerships, SASD works to study and enhance student-learned, academic, and social development.

**EdD in Urban Education**

Both research and the current social climate point to a need for highly effective professionals trained with a focus in particular on urban school, their broader communities, and the social and political factors shaping their organization and function. To this end, the Center for Urban Education is offering and EdD ARCO focused on supporting professionals in gaining a systematic understanding of urban schooling. In particular, the Urban Education ARCO is designed to support the development of leaders in urban education spheres. This program will also support professionals in connecting this work to improvement science to better understand and work with urban communities. Students in the Urban Education ARCO will develop a foundational understanding of the dynamics of urban education, including the history of urban life, communities, and schools in the U.S., as well as policy and practices in the field of urban education. This understanding will ultimately support students in establishing a basis for lifelong learning through normative and critical reflection on urban education within its historical, philosophical, cultural and social contexts.

University of Pittsburgh
School of Education
Center for Urban Education
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230 South Bouquet Street
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cue@pitt.edu
412-383-4487

**Department of Administrative and Policy Studies**

Programs within the Department of Administrative and Policy Studies prepare graduates for educational leadership careers in K-12 schools, school districts, and higher education institutions, for research and teaching careers in colleges and universities, and for research and policy study careers in local, state, national, and international agencies.

Students specialize within three areas of concentration: (1) educational leadership (EdD degree) (2) higher education management, and (3) social and comparative analysis in education. The department offers programs leading to the MEd, MA, EdD, and PhD in administrative and policy studies, as well as certification programs. It also provides service courses for students from other departments and schools at the master's and doctoral levels in education and society, history and sociology of education, education and culture, educational anthropology, supervision, administration, education law, qualitative and quantitative inquiry, interpretive research, and evaluation.

Detailed program information appears below.

**General Contact Information**
Program Information

Higher Education Management Program

The Higher Education Management Program serves graduate students who wish to pursue advanced study in student affairs, academic affairs, and institutional management and policy, and who demonstrate a superior level of expertise and capacity for leadership in the field of higher education.

The following degrees in administrative and policy studies are offered with a concentration in higher education management:

- **Master of Education (MEd)**
  The Master of Education (MEd) in Higher Education Management prepares scholar practitioners for positions working within institutions of higher education. Designed for domestic and international students seeking positions as early career professionals and those already working in the field, students pursue one of two tracks, either management or student services, depending on their professional focus.

- **Doctor of Education (EdD)**
  In the higher education management ARCO, students examine measures that reflect institutional effectiveness, data-based planning, and decision making in higher education environments that demand accountability and transparency. The skills and proficiencies developed are required to succeed at institutions of higher learning. Graduates of our program have worked as directors of institutional development, admissions, and residence life; deans of student affairs; registrars; and college presidents and vice presidents.

- **Doctor of Philosophy (PhD)**
  The PhD degree program in higher education includes a core set of courses designed for students to gain an understanding of historical, political, philosophical, and social elements that shape and continue to reshape higher education. These courses include Higher Education Administration, the Politics and History of Higher Education, Higher Education Research Frameworks and Theory, and Higher Education Policy and Issues. These courses are complemented by core courses within the department of Administrative and Policy Studies designed to ground students in the study education as a discipline. Students develop an area of research specialization within the field of higher education and take other courses at the School of Education as well as courses outside of the school that complement their specialization. In addition, through a strong focus within the program on rigorous methodological training, students gain competency in both quantitative and qualitative research methods and take advanced courses in the methodological approaches they plan to utilize in their research.

Education Leadership Program

The mission of the program is to deliver a preeminent preparation program for aspiring school leaders that provides a relevant and balanced course of studies, which includes rigorous field experience. The goal of the Education Leadership Program is to ensure that all graduates acquire competence through the integration of the knowledge and skills necessary for formulating and implementing a clear vision of educational processes and outcomes associated with responsible data orientation, pertinent to organizational and professional development of staff, and related to effective and responsive management.

Degree and Certification Requirements:

The following degrees in administrative and policy studies are offered with a concentration in school leadership:

- **Master of Education (MEd)**
Certification programs: K-12 Principal, Supervisor of Curriculum and Instruction and the Superintendent's Letter of Eligibility. The certification programs meet Pennsylvania Standards for Commonwealth Certification.

Doctor of Education (EdD)
The EdD in education leadership is suited for principals and school administrators who desire to become superintendents while earning their doctoral degree. You can earn your doctorate while also completing the requirements for your Superintendent's Letter of Eligibility through the Executive Cohort for Educational Leaders (ExCEL) program. ExCEL’s purpose is to prepare leaders who champion publicly supported schools and who are committed advocates for children and youths.

Doctor of Philosophy (PhD)

Social and Comparative Analysis in Education Program

Social and Comparative Analysis in Education (SCAE) is the scholarly study of fundamental problems and questions in education in the United States and around the world from a critical, global perspective. SCAE looks at education holistically, including formal and non-formal settings across the lifespan. SCAE analyzes the relationship between education and social justice in the complementary fields of social foundations, comparative, international, and development education.

Degree and Certification Requirements:

The following degrees in administrative and policy studies are offered with a concentration in social and comparative analysis in education:

- Master of Arts (MA)
- Master of Education (MEd)
- Doctor of Education (EdD)

The social and comparative analysis in education ARCO prepares creative and innovative professionals to take leadership of their chosen professional fields. As scholars, practitioners, and citizens, EdD students in this ARCO conduct research related to their professional practice while expanding the support of students in pre-K-16 education and nonformal educational settings. This is in addition to creating structures, practices, and policies that reflect a commitment to equity and social justice, critical deliberation, and collaborative links between educational institutions and local and national communities.

- Doctor of Philosophy (PhD)
The Doctor of Philosophy (PhD) degree in SCAE trains scholars to apply disciplinary theories and methods from economics, sociology, and anthropology to the study of educational productivity and inequality. In addition to classic theories of how organizations and actors interact within educational systems, we also focus on understanding the effects of contemporary educational policies, trends, and reforms. An emphasis on theories and methods in the social sciences and humanities is coupled with an empirical focus on real-world studies of instructional and organizational processes. The PhD program considers education holistically, including formal and non-formal settings across the lifespan, and has a special strength in comparative, international, and development education.

Education Leadership, EdD

EdD Curriculum

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.

The EdD curriculum is delivered in several stages, through a variety methods:

- **Orientation:** The EdD cohort participates in a full-day, on campus, orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.
• **One-week intensive on ramp:** The EdD cohort will participate in a full-week, on campus, experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

• **Hybrid seminars:** You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on campus sessions is required.

**SCHEDULE**

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<td>Foundation 2: Leadership in Groups and Organizations (3 credits)</td>
<td>Foundation 3: Education Contexts (3 credits)</td>
<td>Foundation 4: Investigating Policy as a Lever for Change (3 credits)</td>
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<td>ARCO: Course 2 (3 credits)</td>
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<td>Practitioner Inquiry 4 (3 credits)</td>
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<tr>
<td>ARCO: Course 3 (3 credits)</td>
<td>ARCO: Course 4 (3 credits)</td>
<td>Laboratory of Practice (3 credits)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3: Fall</th>
<th>Year 3: Spring</th>
<th>Year 3: Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance in Scholarly Practice (6 credits)</td>
<td>Guidance in Scholarly Practice (6 credits)</td>
<td>Guidance in Scholarly Practice (6 credits)</td>
</tr>
</tbody>
</table>

**CORE COURSES** Credits / Units: 24 Total

**Foundation Courses**

• EDUC 3002 - FOUNDATIONS 1:  
• EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS  
• EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION  
• EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE

**Practitioner Inquiry Courses**

• EDUC 3001 - PRACTITIONER INQUIRY 1  
• EDUC 3006 - PRACTITIONER INQUIRY 2  
• EDUC 3007 - PRACTITIONER INQUIRY 3  
• EDUC 3008 - PRACTICUM INQUIRY 4

**SUPERVISED PRACTITIONER INQUIRY**

Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.

• EDUC 3009 - SUPERVISED PRACTITIONER INQUIRY

**LABORATORY OF PRACTICE**
Students will complete a Laboratory of Practice, a setting where theory and practice inform and enrich each other and facilitate transformative and generative learning that is measured by the development of scholarly expertise and implementation of practice (Carnegie Project on the Education Doctorate, 2010). Students choose from three types of experiences: job embedded, aspirant, or global.

- **EDUC 3012 - SUPERVISED INTERNSHIP**

**GUIDANCE IN SCHOLARLY PRACTICE**

**Guidance in Scholarly Practice:** Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.

**Portfolio of Scholarly Practice:** The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.

- **EDUC 3099 - GUIDANCE IN DOCTORAL DEGREE**

**Education Leadership ARCO Curriculum**

**Education Leadership ARCO Courses**

- ADMPS 3088 - COMPETENT KNOWLEDGE MANAGEMENT AND UTILIZATION
- ADMPS 3101 - COMPETENT MANAGEMENT OF FISCAL RESOURCES
- ADMPS 3114 - COMPETENT MANAGEMENT OF STUDENT PERSONNEL SERVICES
- ADMPS 3116 - COMPETENT MANAGEMENT OF HUMAN RESOURCES

**Higher Education Management, EdD**

**EdD Curriculum**

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.

The EdD curriculum is delivered in several stages, through a variety methods:

- **Orientation:** The EdD cohort participates in a full-day, on campus, orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.

- **One-week intensive on ramp:** The EdD cohort will participate in a full-week, on campus, experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

- **Hybrid seminars:** You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on campus sessions is required.

**SCHEDULE**

<table>
<thead>
<tr>
<th>Year 1: Summer</th>
<th>Year 1: Fall</th>
<th>Year 1: Spring</th>
<th>Year 1: Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation 1: Becoming a Leader Scholar Practitioner (3 credits)</td>
<td>Foundation 2: Leadership in Groups and Organizations (3 credits)</td>
<td>Foundation 3: Education Contexts (3 credits)</td>
<td>Foundation 4: Investigating Policy as a Lever for Change (3 credits)</td>
</tr>
<tr>
<td>ON-RAMP</td>
<td>ARCO: Course 1</td>
<td>ARCO: Course 2</td>
<td>Practitioner Inquiry 2</td>
</tr>
</tbody>
</table>
### Year 2: Fall
- Supervised Practitioner Inquiry (3 credits)
- ARCO: Course 3 (3 credits)

### Year 2: Spring
- Practitioner Inquiry 3 (3 credits)
- ARCO: Course 4 (3 credits)

### Year 2: Summer
- Practitioner Inquiry 4 (3 credits)
- Laboratory of Practice (3 credits)

### Year 3: Fall
- Guidance in Scholarly Practice (6 credits)

### Year 3: Spring
- Guidance in Scholarly Practice (6 credits)

### Year 3: Summer
- Guidance in Scholarly Practice (6 credits)

## CORE COURSES
Credits / Units: 24 Total

### Foundation Courses
- EDUC 3002 - FOUNDATIONS 1
- EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS
- EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION
- EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE

### Practitioner Inquiry Courses
- EDUC 3001 - PRACTITIONER INQUIRY 1
- EDUC 3006 - PRACTITIONER INQUIRY 2
- EDUC 3007 - PRACTITIONER INQUIRY 3
- EDUC 3008 - PRACTICUM INQUIRY 4

### SUPERVISED PRACTITIONER INQUIRY
Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.
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- EDUC 3012 - SUPERVISED INTERNSHIP

### GUIDANCE IN SCHOLARLY PRACTICE
**Guidance in Scholarly Practice:** Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.

**Portfolio of Scholarly Practice:** The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.
- EDUC 3099 - GUIDANCE IN DOCTORAL DEGREE

Higher Education Management ARCO Curriculum
Higher Education Management ARCO Courses

- ADMPS 3104 - HIGHER EDUCATION INSTITUTIONAL STRATEGIC PLANNING
- ADMPS 3129 - HIGHER EDUCATION HUMAN RESOURCE MANAGEMENT
- ADMPS 3209 - HIGHER EDUCATION INSTITUTIONAL ASSESSMENT & ACCREDITATION
- ADMPS 3128 - HIGHER EDUCATION BUDGET MANAGEMENT

Higher Education Management, PhD

The University of Pittsburgh School of Education's Doctor of Philosophy (PhD) programs prepare students to be nationally competitive and highly qualified for research careers in both academic and non-academic institutions. Our full-time, research-intensive PhDs produce scholars who demonstrate excellent writing and research skills, independent scholarship and productivity, and proficiency in teaching. Under the guidance of our distinguished graduate faculty, students will have the opportunity to produce peer-reviewed publications, present at professional conferences, and collaborate on grant-writing and review, positioning them to excel in their careers as researchers and faculty. Because the PhDs are full-time, students can be fully immersed in their coursework and research in preparation for an impactful scholarly career.

The Higher Education Management program is committed to advancing scholarship, research, and practice in the field of higher education. Designed for domestic and international students who aspire to careers as scholar-researchers, the Doctor of Philosophy (PhD) degree prepares students for positions as university faculty, researchers at educational think tanks and major policy institutes, and as leaders of administrative units with teaching and research responsibilities. Students pursuing a PhD in higher education have research interests ranging from student access to student outcomes, diversity and equity, international and comparative education, administration and management, and policy studies.

Students pursuing the PhD degree have widespread opportunities to engage closely with and learn from faculty who conduct cutting-edge research in the field and who have a strong commitment to high-quality teaching. Students are afforded the opportunity to work with faculty members to conduct research, present at professional conferences, and publish prior to the completion of their degrees. The faculty have expertise in both quantitative and qualitative methodologies, and do both applied and basic research, all with a focus on improving educational outcomes.

The PhD degree program in higher education includes a core set of courses designed for students to gain an understanding of historical, political, philosophical, and social elements that shape and continue to reshape higher education. These courses include Higher Education Administration, the Politics and History of Higher Education, Higher Education Research Frameworks and Theory, and Higher Education Policy and Issues. These courses are complemented by core courses within the department of Administrative and Policy Studies designed to ground students in the study education as a discipline. Students develop an area of research specialization within the field of higher education and take other courses at the School of Education as well as courses outside of the school that complement their specialization. In addition, through a strong focus within the program on rigorous methodological training, students gain competency in both quantitative and qualitative research methods and take advanced courses in the methodological approaches they plan to utilize in their research.

Doctoral Degree Requirements

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Doctoral Programs

Doctor of Education (EdD) and Doctor of Philosophy (PhD) degree programs are offered by the School of Education to provide advanced graduate study and professional specialization in education. Each recipient must show evidence of superior scholarship, mastery of a special field of
knowledge, and ability to do significant and relevant research. In doctoral study in the School of Education, a distinction is made between the preparation of education professionals resulting in the EdD degree and the preparation of education professionals resulting in the PhD degree. While EdD and PhD degrees produce experts in critical inquiry, the School of Education distinguishes the degrees according to, among other factors, the focus of the area of inquiry, the type of knowledge advanced, and the career path chosen by the individual student.

PhD research focuses on the study of basic problems arising primarily from behavioral and social science theory with the goal of advancing such theory and knowledge. Individuals pursuing this degree often seek academic positions in universities or research institutes. EdD research focuses on the study of applied, practical problems with the goal of contributing to solutions. Careers for these individuals often center on professional positions as administrators, curriculum developers, or specialists in schools and clinical settings.

Credit Requirements

Doctoral degrees require a minimum of 90 credits in a degree program beyond the baccalaureate, distributed as follows: a minimum of 72 course credits (including transfer credits) and a minimum of 18 dissertation credits. Doctoral-level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study. Generally, courses numbered below 2000 do not meet the minimum requirements for doctoral study. Exceptions require the approval of the program or department. No lower-level undergraduate course (numbered 0001-0999) may be applied toward a doctoral degree.

Grade Point Average/Academic Probation

All students enrolled in doctoral degree programs are required to maintain a grade point average (GPA) of at least 3.300. The cumulative GPA is based on all course work taken after enrollment in the appropriate doctoral program. A student is automatically placed on academic probation when the cumulative GPA after 9 credits or more, exclusive of transfer credits, falls below 3.300. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.500 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of two years may be granted to doctoral students. The length and rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures.
at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Curriculum

The University of Pittsburgh School of Education’s Doctor of Philosophy (PhD) programs prepare students to be nationally competitive and highly qualified for research careers in both academic and non-academic institutions. Our full-time, research-intensive PhDs produce scholars who demonstrate excellent writing and research skills, independent scholarship and productivity, and proficiency in teaching. Under the guidance of our distinguished graduate faculty, students will have the opportunity to produce peer-reviewed publications, present at professional conferences, and collaborate on grant-writing and review, positioning them to excel in their careers as researchers and faculty. Because the PhDs are full-time, students can be fully immersed in their coursework and research in preparation for an impactful scholarly career.

The Higher Education Management program is committed to advancing scholarship, research, and practice in the field of higher education. Designed for domestic and international students who aspire to careers as scholar-researchers, the Doctor of Philosophy (PhD) degree prepares students for positions as university faculty, researchers at major policy institutes, and as leaders of administrative units with teaching and research responsibilities.

Degree Requirements: This degree requires a minimum of 90 credits.

- ADMPS 3001 - RESEARCH METHODS IN EDUCATION POLICY AND PRACTICE
- ADMPS 3003 - THEORIES OF EDUCATIONAL INEQUALITY
- ADMPS 2307 - POLITICS AND HISTORY OF HIGHER EDUCATION
- ADMPS 3097 - SUPERVISED RESEARCH
- ADMPS 3131 - STUDENT, CAMPUS, AND SOCIETY
- ADMPS 3135 - SEMINAR IN COLLEGE TEACHING
- ADMPS 3136 - COMPARATIVE HIGHER EDUCATION
- ADMPS 3139 - LEGAL ASPECTS OF HIGHER EDUCATION
- ADMPS 3142 - ADVANCED SEMINAR IN HIGHER EDUCATION
- ADMPS 3301 - SOCIAL THEORIES AND EDUCATION GLOBAL CONTEXT
- ADMPS 3343 - COMPARATIVE EDUCATION
- ADMPS 2131 - HIGHER EDUCATION ADMINISTRATION
- ADMPS 2055 - STUDENT DEVELOPMENT THEORY
- ADMPS 3015 - ETHICAL ISSUES IN HIGHER EDUCATION
- ADMPS 3141 - POLICY STUDIES IN HIGHER EDUCATION
- EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
- EDUC 3103 - QUANTITATIVE METHODS 2
- EDUC 3104 - INTRODUCTION TO QUALITATIVE METHODS

Doctor of Philosophy (PhD) Degree Requirements

The Doctor of Philosophy degree in the School of Education is a research-intensive training model that prepares students to be nationally competitive for research careers in both academic and non-academic institutions.

Admissions requirements include the GRE for both national and international applicants. International students require a minimum of 100 or higher TOEFL composite score with sub-scores of 21 or higher or 7.0 IELTS with sub-scores of 6.0 or higher. After screening, a small group of applicants will be interviewed prior to a final decision. Only applicants committed to full-time study will be considered (except in unusual circumstances where the applicant works in a setting where research opportunities are available such as a research assistant on a funded project at a research institute).

Plan of Studies
Prior to advancement to the formal stage called Doctoral Study, the student, in consultation with the academic advisor, must complete a plan of studies that conforms to program requirements. The plan of studies, approved by the academic advisor, the program coordinator, and department is filed in the Office of Admissions and Enrollment Services.

PhD students are required to file a Plan of Studies during the first year in the program. In formulating the doctoral Plan of Studies, both the student and the academic advisor must pay close attention to these School of Education requirements as well as requirements specific to the particular program or department in which the degree specialization is taken. It is the responsibility of the student to learn particular requirements from the academic advisor. The completion of requirements for the doctorate must be satisfied through registration at the University of Pittsburgh.

Courses approved for transfer credit must be listed individually on the plan of studies. Also, when a student plan of studies lists directed study credits, a directed study agreement form must be completed, signed by both the student and faculty supervisor, and submitted for each directed study at the time of registration. Forms are available from the department.

Any changes in the plan of studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed with the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved plan of studies.

Credit Requirements

The PhD degree requires a minimum of 90 credits in a degree program beyond the baccalaureate, distributed as follows: a minimum of 72 course credits (including transfer credits) and a minimum of 18 dissertation credits. Doctoral-level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study if approved on a plan of studies. Generally, courses numbered below 2000 do not meet the minimum requirements for doctoral study. Exceptions require the approval of the program or department. No lower-level undergraduate course (numbered 0001-0999) may be applied toward a doctoral degree. Department and program websites list specific degree requirements.

Acceptance of Transfer Credits

PhD students apply a maximum of 30 post-baccalaureate credits for transfer from other institutions in keeping with University-wide requirements (see Acceptance of Transfer Credits). Both applicants for admission and continuing University of Pittsburgh doctoral students seeking acceptance of transfer credits toward a doctoral degree must submit their transcripts with a completed "Course Credits Accepted" form, available on the School of Education website. When approved, transfer credits must appear on the student's Plan of Studies. The registrar, after notification of acceptance of transfer credits, will enter the individual transfer credits on the student's transcript. Grades (and quality points) are not recorded for credits accepted by transfer.

Each course transferred must meet the following conditions:

- The course grade must be at least B (GPA = 3.00) or its equivalent.
- The course must be judged relevant to a student's doctoral Plan of Studies by the program or department.
- The course must be approved for equivalent graduate degrees at the accredited institution, extension, or off-campus center of other institutions at which the course was taken.

The completion of requirements for the doctorate must be satisfied through registration at the University of Pittsburgh. However, under certain circumstances, a student may earn in an accredited graduate institution other than the University of Pittsburgh a limited number of credits toward a doctoral degree.

Doctoral students desiring to take courses at another institution following admission to the University of Pittsburgh should review the course descriptions and receive approval from their academic advisors and program or department prior to registering for those courses if they wish to ensure that these credits will be acceptable for transfer.

Residency

PhD students are required to be enrolled for full-time study, including involvement in research activities.

Supporting Field

PhD students are required to complete a minimum of nine credits in an academic discipline outside of education. This requirement may be met in one of three ways:
1. For a student who does not have a bachelor's degree or an equivalent number of credits to that for a bachelor's degree in an appropriate academic discipline, a minimum of 18 credits must be taken outside the School of Education in one field or in an interdisciplinary concentration (e.g., Latin American Studies or psycholinguistics) as approved by the program or department. No more than 6 of these credits may be used to satisfy research methodology requirements.

2. For a student who has a bachelor's degree or an equivalent number of credits for a bachelor's degree in an academic discipline, a minimum of 9 credits must be taken outside the School of Education in one field or in an interdisciplinary concentration as approved by the program or department. None of the 9 credits may be used to satisfy research methodology requirements.

3. For a student who has a master's degree or an equivalent number of credits toward a master's degree in a relevant academic discipline outside of education, no additional credits outside the School of Education need to be taken.

**Supervised Research**

PhD students are required to complete a supervised research experience that results in a written report of the experience. Enrollment for six credits of supervised research, internship, practicum, or directed study is required.

**Statute of Limitations**

From the student's initial registration for doctoral study at the University of Pittsburgh, all requirements for the PhD must be completed within a period of 10 years (or 8 years if the student has received credit for a master's degree appropriate to the field of study).

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

**Doctoral Preliminary Evaluation**

Each doctoral student is required to take a preliminary evaluation designed to assess the breadth of the student's knowledge of the discipline, the student's achievement during the initial phase of graduate study, and the student's potential to apply research methods independently. The preliminary evaluation is administered by the program or department to which the student has been admitted. Procedures of administration are available from the program or department.

**Advancement to Doctoral Study**

To advance to doctoral study, a student must:

- be admitted to full graduate status;
- have completed at least 15 post-master's graduate credits at the University of Pittsburgh;
- have earned a GPA of at least 3.30 (transfer credits not considered) in post-master's graduate study at the University of Pittsburgh;
- have a Plan of Studies approved by the academic advisor and the program coordinator on file in the Office of Admissions and Enrollment Services; and
- have passed the doctoral preliminary evaluation.

**Comprehensive Examination**

After advancement to doctoral study, each doctoral student is required to take a comprehensive examination. The comprehensive examination is constructed, administered, and scored by the department or program to which the student has been admitted. Procedures and schedules of administration are available from the department or program.

A student must be registered in the term during which the comprehensive examination is taken. In no case may the student be graduated in the same term in which the comprehensive examination is taken. After the comprehensive examination is passed, the student has the remaining time specified by the statute of limitations to complete all remaining doctoral degree requirements. Satisfactory completion of the doctoral comprehensive examination requirement is part of the demonstration of doctoral competency.

Ordinarily, students do not register for dissertation credits until they have passed the comprehensive examination.

**Doctoral Competency**

Each doctoral student is required to demonstrate doctoral competency by satisfactorily completing the supervised research requirement and doctoral comprehensive examination. The form certifying that a student has demonstrated doctoral competency is initiated by the student's academic advisor,
signed by the academic advisor, the program coordinator, and the department chairperson, and then sent to the Office of Admissions and Enrollment Services. The dean/associate dean notifies the student that doctoral competency has been demonstrated.

**Doctoral Committee**

For the PhD student, the doctoral committee consists of the research advisor and at least three other members, including one member from another department outside the School of Education at the University of Pittsburgh or from an appropriate graduate program outside education at another academic institution. The research advisor and a majority of the total committee must be full or adjunct members of the graduate faculty of the University of Pittsburgh. Current graduate faculty membership may be found on the University's Institutional Research website.

The program faculty, the department chairperson, and the dean/associate dean must approve membership on and subsequent changes in the doctoral committee. After the program has approved the doctoral committee, the research advisor initiates the "Proposed Doctoral Committee" form to obtain the signatures of the program coordinator, the department chairperson, and the dean/associate dean. The dean/associate dean must give final approval of the doctoral committee before the overview examination may be scheduled.

**Dissertation Overview**

The dissertation overview is a written proposal and must be presented to the doctoral committee for approval after doctoral competency has been demonstrated.

**The Overview Examination**

The overview examination is conducted by the doctoral committee, is chaired by the research advisor, and is open to any faculty member of the graduate faculty of the University wishing to attend. Although any faculty member may participate in the examination, only members of the doctoral committee may be present during the final deliberation and vote on approving the overview. Each member of the doctoral committee must sign the overview form and vote on approving the overview. The committee must unanimously approve the overview in order for the student to be advanced to doctoral candidacy.

**Dissertation**

*Students should review the information detailed under Dissertation and Abstract and Final Oral Examination for University-wide regulations regarding dissertations and dissertation defenses.* School of Education-specific rules follow:

**The Dissertation Defense**

The same rules apply here as detailed under The Overview Examination above.

**Vote on the Dissertation Defense**

Each member of the doctoral committee must sign the dissertation defense form and vote to pass or fail the student on the dissertation defense. If the decision of the committee is not unanimous, the case is referred to the dean/associate dean for resolution.

**Submission Requirements and Fees**

For general information concerning preparation of the dissertation, refer to the ETD website.

At least one week prior to the end of the term, the dissertation is submitted in final form to the Office of Admissions and Enrollment Services along with the following materials:

- Signed dissertation defense form
- Signed ETD approval form
- Two copies of the dissertation abstract initialed by the research advisor
- Completed ProQuest Agreement forms
- Completed Survey of Earned Doctorate form
- Receipt from the Student Payment Center for payment of the dissertation processing fee
- Two copies of the title page

Information concerning requirements for preparing the abstract, the forms to be completed, and the amount of the fees to be paid is available in the Office of Admissions and Enrollment Services. The dissertation and abstract will be examined there to see that they are prepared in an acceptable
School Leadership, PhD

Doctoral Degree Requirements

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Under special conditions, graduate students may be granted one leave of absence. A maximum leave of two years may be granted to doctoral students. The length and rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy

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Doctor of Philosophy Degree

The University of Pittsburgh School of Education's Doctor of Philosophy (PhD) programs prepare students to be nationally competitive and highly qualified for research careers in both academic and non-academic institutions. Our full-time, research-intensive PhDs produce scholars who demonstrate excellent writing and research skills, independent scholarship and productivity, and proficiency in teaching. Under the guidance of our distinguished graduate faculty, students will have the opportunity to produce peer-reviewed publications, present at professional conferences, and collaborate on grant-writing and review, positioning them to excel in their careers as researchers and faculty. Because the PhDs are full-time, students can be fully immersed in their coursework and research in preparation for an impactful scholarly career.

Degree Requirements: This degree requires a minimum of 90 credits.

For additional degree requirement information, refer to the School of Education section on Doctoral Degree Requirements and to the Education Leadership webpage.

- ADMPS 3003 - THEORIES OF EDUCATIONAL INEQUALITY
- ADMPS 3001 - RESEARCH METHODS IN EDUCATION POLICY AND PRACTICE
- ADMPS 3314 - EDUCATIONAL REFORM
- ADMPS 3301 - SOCIAL THEORIES AND EDUCATION GLOBAL CONTEXT
- ADMPS 3097 - SUPERVISED RESEARCH
- ADMPS 2050 - RACE AND RACISM IN EDUCATION AND SOCIETY
- ADMPS 2106 - INTERNATIONAL AND GLOBAL EDUCATION
- ADMPS 2133 - GENDER AND EDUCATION
- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2307 - POLITICS AND HISTORY OF HIGHER EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
- ADMPS 2344 - LEADERSHIP IN SERVICE LEARNING
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- ADMPS 2353 - APPLIED ANTHROPOLOGY OF EDUCATION
- ADMPS 2359 - GENDER IN EDUCATION
- ADMPS 2398 - ECONOMICS OF EDUCATION
Social and Comparative Analysis in Education, EdD

EdD Curriculum

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.

The EdD curriculum is delivered in several stages, through a variety of methods:

- **Orientation:** The EdD cohort participates in a full-day, on-campus orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.

- **One-week intensive on ramp:** The EdD cohort will participate in a full-week, on-campus experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

- **Hybrid seminars:** You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on-campus sessions is required.

### SCHEDULE

<table>
<thead>
<tr>
<th>Year 1: Summer</th>
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<tbody>
<tr>
<td>Foundation 1: Becoming a Leader Scholar Practitioner (3 credits) <strong>ON-RAMP</strong>&lt;br&gt;PRACTITIONER INQUIRY 1 (3 credits)</td>
<td>Foundation 2: Leadership in Groups and Organizations (3 credits)&lt;br&gt;ARCO: Course 1 (3 credits)</td>
<td>Foundation 3: Education Contexts (3 credits)&lt;br&gt;ARCO: Course 2 (3 credits)</td>
<td>Foundation 4: Investigating Policy as a Lever for Change (3 credits)&lt;br&gt;PRACTITIONER INQUIRY 2 (3 credits)</td>
</tr>
<tr>
<td>Year 2: Fall</td>
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<td>Year 2: Summer</td>
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<tr>
<td>Supervised Practitioner Inquiry (3 credits)&lt;br&gt;ARCO: Course 3 (3 credits)</td>
<td>Practitioner Inquiry 3 (3 credits)&lt;br&gt;ARCO: Course 4 (3 credits)</td>
<td>Practitioner Inquiry 4 (3 credits)&lt;br&gt;Laboratory of Practice (3 credits)</td>
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</table>
CORE COURSES Credits / Units: 24 Total

Foundation Courses
- EDUC 3002 - FOUNDATIONS 1:
- EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS
- EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION
- EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE

Practitioner Inquiry Courses
- EDUC 3001 - PRACTITIONER INQUIRY 1
- EDUC 3006 - PRACTITIONER INQUIRY 2
- EDUC 3007 - PRACTITIONER INQUIRY 3
- EDUC 3008 - PRACTICUM INQUIRY 4

SUPERVISED PRACTITIONER INQUIRY
Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.
- EDUC 3009 - SUPERVISED PRACTITIONER INQUIRY

LABORATORY OF PRACTICE
Students will complete a Laboratory of Practice, a setting where theory and practice inform and enrich each other and facilitate transformative and generative learning that is measured by the development of scholarly expertise and implementation of practice (Carnegie Project on the Education Doctorate, 2010). Students choose from three types of experiences: job embedded, aspirant, or global.
- EDUC 3012 - SUPERVISED INTERNSHIP

GUIDANCE IN SCHOLARLY PRACTICE

Guidance in Scholarly Practice: Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.

Portfolio of Scholarly Practice: The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.
- EDUC 3099 - GUIDANCE IN DOCTORAL DEGREE

Social and Comparative Analysis in Education ARCO Curriculum

Social and Comparative Analysis in Education ARCO Courses
- ADMPS 3006 - SOCIAL THEORIES & EDUCATION IN GLOBAL CONTEXT
- ADMPS 3007 - EDUCATION AND INTERNATIONAL DEVELOPMENT
- ADMPS 3008 - COMMUNITY ENGAGEMENT IN EDUCATION
- ADMPS 3014 - DOCTORAL SEMINAR IN EDUCATION AND SOCIETY
Social and Comparative Analysis in Education, PhD

Doctor of Philosophy Degree

The University of Pittsburgh School of Education's Doctor of Philosophy (PhD) programs prepare students to be nationally competitive and highly qualified for research careers in both academic and non-academic institutions. Our full-time, research-intensive PhDs produce scholars who demonstrate excellent writing and research skills, independent scholarship and productivity, and proficiency in teaching. Under the guidance of our distinguished graduate faculty, students will have the opportunity to produce peer-reviewed publications, present at professional conferences, and collaborate on grant-writing and review, positioning them to excel in their careers as researchers and faculty. Because the PhDs are full-time, students can be fully immersed in their coursework and research in preparation for an impactful scholarly career.

The Doctor of Philosophy degree in SCAE prepares creative and innovative professionals to take leadership in inquiry about critical problems and questions in education. As scholar/practitioner/citizens, Doctor of Philosophy students conduct original research and extend the boundaries of study in education, creating methods for educational practice and inquiry that promote praxis and critical agency. SCAE at Pitt spans educational systems from pre-kindergarten to higher education and includes non-formal educational settings.

Degree Requirements: The Doctor of Philosophy degree requires a minimum of 90 credits in the following areas: Department Core (6 credits), Program Core (9 credits), Specialization (24 credits), Research Methodology (18 credits), Supporting Field (9-18 credits), Electives (9 credits), Supervised Research (6 credits), and Dissertation (18 credits).

For additional degree requirement information, refer to the School of Education section on Doctoral Degree Requirements and to the Social and Comparative Analysis in Education webpage.

- ADMPS 3001 - RESEARCH METHODS IN EDUCATION POLICY AND PRACTICE
- ADMPS 3003 - THEORIES OF EDUCATIONAL INEQUALITY
- ADMPS 3097 - SUPERVISED RESEARCH
- ADMPS 3301 - SOCIAL THEORIES AND EDUCATION GLOBAL CONTEXT
- ADMPS 3314 - EDUCATIONAL REFORM
- ADMPS 3343 - COMPARATIVE EDUCATION
- ADMPS 2050 - RACE AND RACISM IN EDUCATION AND SOCIETY
- ADMPS 2106 - INTERNATIONAL AND GLOBAL EDUCATION
- ADMPS 2133 - GENDER AND EDUCATION
- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2307 - POLITICS AND HISTORY OF HIGHER EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
- ADMPS 2344 - LEADERSHIP IN SERVICE LEARNING
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- ADMPS 2353 - APPLIED ANTHROPOLOGY OF EDUCATION
- ADMPS 2359 - GENDER IN EDUCATION
- ADMPS 2398 - ECONOMICS OF EDUCATION
- ADMPS 2399 - POLITICAL ECONOMY OF EDUCATION
- ADMPS 3015 - ETHICAL ISSUES IN HIGHER EDUCATION
- ADMPS 3127 - CURRICULUM: PERSPECTIVES AND ISSUES (K-12)
- ADMPS 3131 - STUDENT, CAMPUS, AND SOCIETY
- ADMPS 3135 - SEMINAR IN COLLEGE TEACHING
- ADMPS 3136 - COMPARATIVE HIGHER EDUCATION
- ADMPS 3201 - INTRODUCTION TO EDUCATIONAL EVALUATION
- ADMPS 3207 - SECTOR ANALYSIS AND PROJECT DESIGN
PhD Core Curriculum

Methods Courses

Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the methods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a minimum of 5 methods courses: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

First Year Seminar

To further support students' research competencies, PhD students also participate in a school wide first year seminar (EDUC 3102) and EDUC 3105). This seminar meets every other week (1 credit in fall and 2 credits in spring, taken over and above the typical 9 credit course load) and focuses on familiarizing students with practical and ethical issues in research (e.g., necessary clearances for working in schools, resolving questions of authorship and authorship order, human subjects guidelines), and supporting students work on their pre-dissertation proposal (e.g., developing innovative research questions, conducting a literature review).

Urban Education, EdD

Required Courses for Urban Education ARCO Curriculum

Urban Education ARCO Curriculum
Urban Education ARCO Courses

- Introduction to the History and Social Contexts of Urban Education
- Forwarding Critical Perspectives on Urban Education
- Practices in Urban Education
- Urban Schools, Law, and Social Policy

EdD Curriculum

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.

The EdD curriculum is delivered in several stages, through a variety methods:

- **Orientation**: The EdD cohort participates in a full-day, on campus, orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.

- **One-week intensive on ramp**: The EdD cohort will participate in a full-week, on campus, experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

- **Hybrid seminars**: You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on campus sessions is required.

**SCHEDULE**

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<td>Practitioner Inquiry 3 (3 credits)</td>
<td>Practitioner Inquiry 4 (3 credits)</td>
</tr>
<tr>
<td>ARCO: Course 3 (3 credits)</td>
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<td>Laboratory of Practice (3 credits)</td>
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<th>Year 3: Fall</th>
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<tr>
<td>Guidance in Scholarly Practice (6 credits)</td>
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**CORE COURSES** Credits / Units: 24 Total

**Foundation Courses**

- EDUC 3002 - FOUNDATIONS 1:
Practitioner Inquiry Courses
- EDUC 3001 - PRACTITIONER INQUIRY 1
- EDUC 3006 - PRACTITIONER INQUIRY 2
- EDUC 3007 - PRACTITIONER INQUIRY 3
- EDUC 3008 - PRACTICUM INQUIRY 4

SUPERVISED PRACTITIONER INQUIRY
Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.
- EDUC 3009 - SUPERVISED PRACTITIONER INQUIRY

LABORATORY OF PRACTICE
Students will complete a Laboratory of Practice, a setting where theory and practice inform and enrich each other and facilitate transformative and generative learning that is measured by the development of scholarly expertise and implementation of practice (Carnegie Project on the Education Doctorate, 2010). Students choose from three types of experiences: job embedded, aspirant, or global.
- EDUC 3012 - SUPERVISED INTERNSHIP

GUIDANCE IN SCHOLARLY PRACTICE

Guidance in Scholarly Practice: Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.

Portfolio of Scholarly Practice: The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.
- EDUC 3099 - GUIDANCE IN DOCTORAL DEGREE

Higher Education Management, MEd

Master of Education Degree

The Master of Education (MEd) in Higher Education Management prepares scholar practitioners for positions working within institutions of higher education. Designed for domestic and international students seeking positions as early career professionals and those already working in the field, students pursue one of two tracks, either management or student services, depending on their professional focus.

- ADMPS 2050 - RACE AND RACISM IN EDUCATION AND SOCIETY
- ADMPS 2052 - M. ED INTERNSHIP IN HIGHER EDUCATION
- ADMPS 2053 - ORGANIZATION AND MANAGEMENT EFFECTIVENESS
- ADMPS 2054 - ORGANIZATION DEVELOPMENT & LEADING CHANGE
- ADMPS 2055 - STUDENT DEVELOPMENT THEORY
- ADMPS 2056 - STUDENT SERVICES PROGRAM ASSESSMENT
- ADMPS 2080 - SPECIAL TOPICS
- ADMPS 2089 - SPECIAL TOPICS
- ADMPS 2090 - RESEARCH SEMINAR
- ADMPS 2120 - CAPSTONE SEMINAR IN STUDENT SERVICES
- ADMPS 2128 - LEADERSHIP
- ADMPS 2181 - DECONSTRUCTING THE UNIVERSITY

412
School Leadership, MEd

Curriculum

Social and Comparative Analysis in Education, MA

SCAE Specialization Courses in Social Context of Education

Required course:

- EDUC 2100 - EDUCATION AND SOCIETY

Select at least 9 credits from these foundational courses:

- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- ADMPS 2398 - ECONOMICS OF EDUCATION
- ADMPS 3127 - CURRICULUM: PERSPECTIVES AND ISSUES (K-12)
- ADMPS 3343 - COMPARATIVE EDUCATION

Select at least 3 additional credits from courses for the Social Context of Education (see list here).

SCAE Specialization Courses in Comparative and International Education Policy

Required courses:

- EDUC 2100 - EDUCATION AND SOCIETY
- ADMPS 3343 - COMPARATIVE EDUCATION
- ADMPS 3347 - INTERNATIONAL ORGANIZATION DEVELOPMENT EDUCATION

Select at least 3 credits from these foundational courses:

- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- ADMPS 2398 - ECONOMICS OF EDUCATION

Select at least 3 additional credits from courses for Comparative and International Education Policy (see list here).

Supporting Field
Select at least 6 credits of coursework inside and outside the School of Education that deepen disciplinary knowledge and skill.

Psychological Perspectives on Education

Select 3 credits for developing competency in psychological perspectives on education.

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- PSYED 2127 - HUMAN LEARNING
- PSYED 2503 - DEVELOPMENT: CONCEPTION THROUGH EARLY CHILDHOOD
- PSYED 2504 - DVLP: MIDDLE CHLHD/ADOLESCENCE

Research Methods

Select at least 6 credits; see list here for recommended courses.

- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY

Master's Thesis

A 6-credit master's thesis is completed under the direction of the faculty advisor.

- ADMPS 2090 - RESEARCH SEMINAR
- ADMPS 2099 - GUIDANCE IN THE MASTER'S DEGREE

Social and Comparative Analysis in Education, MEd

Student can chose between two specialization tracks; Comparative and International Education Policy or Social Context of Education.

SCAE Specialization Courses in Comparative and International Education Policy

Required courses:

- EDUC 2100 - EDUCATION AND SOCIETY
- ADMPS 3343 - COMPARATIVE EDUCATION
- ADMPS 3347 - INTERNATIONAL ORGANIZATION DEVELOPMENT EDUCATION

Select at least 3 credits from these foundational courses:

- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- ADMPS 2398 - ECONOMICS OF EDUCATION

Select at least 12 additional credits from courses for Comparative and International Education Policy (see list here).

SCAE Specialization Courses in Social Context of Education

Required course:

- EDUC 2100 - EDUCATION AND SOCIETY

Select at least 9 credits from these foundational courses:

- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
ADMPS 2305 - SOCIOLOGY OF EDUCATION
ADMPS 2306 - HISTORY OF EDUCATION
ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
ADMPS 2342 - EDUCATION AND CULTURE
ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
ADMPS 2398 - ECONOMICS OF EDUCATION
ADMPS 3127 - CURRICULUM: PERSPECTIVES AND ISSUES (K-12)
ADMPS 3343 - COMPARATIVE EDUCATION

Select at least 12 additional credits from above or other courses for the Social Context of Education (see list here).

Psychological Perspectives on Education

Select 3 credits from these courses to develop competency in psychological perspectives on education:

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- PSYED 2127 - HUMAN LEARNING
- PSYED 2503 - DEVELOPMENT: CONCEPTION THROUGH EARLY CHILDHOOD
- PSYED 2504 - DVLP: MIDDLE CHLHD/ADOLESCENCE

Research Methods

Select at least 6 credits; see additional courses here.

Required:

- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY

Master's Research Paper

A 3-credit master's research paper is completed under the direction of the faculty advisor.

- ADMPS 2090 - RESEARCH SEMINAR

K-12 Principal Certificate - School Leadership

The School of Education at the University of Pittsburgh K-12 Principal certificate program is a 15-month cohort-based program. Presented in an executive format, the Leadership Initiative for Transforming Schools (LIFTS) program collaborates with units in the School of Education and across the University.

The purpose of our principal certificate program is to develop educational leaders of character and integrity who are inspired by a sense of justice to improve the achievement of all students. Drawing from the fields of education and management, the program equips leaders with expertise in instructional, institutional and public leadership grounded in ethics, inquiry, and integrity. The program encourages the shift from teacher leadership to administrative leadership through academic rigor in the classroom, authentic experiences in schools and reflective opportunities for integrating personal and professional growth.

Curriculum

Summer 2018 Courses:

- ADMPS 2123 - SUMMER LEADERSHIP INSTITUTE
- ADMPS 2402 - HEALTH, MENTAL HEALTH AND SAFETY

Fall 2018 Courses:
Spring 2019 Courses:
- ADMPS 2404 - INSTRUCTIONAL LEADERSHIP
- ADMPS 2405 - PUBLIC LEADERSHIP: SCHOOL LAW

Summer 2019 Courses:
- ADMPS 2410 - INSTITUTIONAL LEADERSHIP
- ADMPS 2412 - LEADERSHIP FOR INCLUSIVE SCHOOLS

Superintendent's Letter of Eligibility Certificate - School Leadership

- 24 Credits over twenty months or 5 terms
- All courses approved for Act 45 Credit
- Blended Delivery System (Online + Monthly Campus Class)
- Three 1 credit internship experiences

Program Courses

- EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS
- EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION
- EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE
- ADMPS 3088 - COMPETENT KNOWLEDGE MANAGEMENT AND UTILIZATION
- ADMPS 3116 - COMPETENT MANAGEMENT OF HUMAN RESOURCES
- ADMPS 3093 - INTERNSHIP IN CENTRAL OFFICE ADMINISTRATION
  This course is taken in three (3) separate terms for one (1) credit each
- ADMPS 3114 - COMPETENT MANAGEMENT OF STUDENT PERSONNEL SERVICES
- ADMPS 3101 - COMPETENT MANAGEMENT OF FISCAL RESOURCES

Supervisor of Curriculum and Instruction Certificate - School Leadership

This is a 24-credit, 15 month program completed with a cohort in 4 consecutive terms (summer, fall, spring, summer).

Program Courses

- ADMPS 2123 - SUMMER LEADERSHIP INSTITUTE
- ADMPS 2412 - LEADERSHIP FOR INCLUSIVE SCHOOLS
- ADMPS 2093 - SUPERVISOR CURRICULUM AND INSTRUCTION INTERNSHIP
- ADMPS 2403 - INSTRUCTIONAL LEADERSHIP
- ADMPS 2403 - TEACHER SUPERVISION AND EFFECTIVENESS
- ADMPS 2406 - PUBLIC LEADERSHIP: ASSESSMENT AND ACCOUNTABILITY
- ADMPS 2407 - POLITICS OF EDUCATION: SCHOOL COMMUNITY PARTNERSHIP
- ADMPS 2086 - CURRICULUM IN SCHOOLS

Department of Health and Physical Activity
The Department of Health and Physical Activity (HPA) focuses its academic, research, and service efforts on promoting physically active lifestyles and other health-related behaviors to prevent disease and enhance quality of life across the lifespan. HPA's expertise has attracted research funding in the areas of physical activity behavior and epidemiology, obesity prevention and treatment, cardiovascular disease, diabetes, fitness training, and health promotion.

The faculty expertise combined with collaboration with other entities with the University of Pittsburgh such as the School of Nursing, the School of Medicine, the Graduate School of Public Health, School of Health and Rehabilitative Sciences, and the University of Pittsburgh Medical Center (UPMC) Hospital network provides for a state-of-the-art and innovative academic, research and clinical experience.

Contact Information

Graduate Coordinator
Department of Health and Physical Activity
140 Trees Hall
412-648-8320
Fax: 412-648-7092
E-mail: hpa@pitt.edu
www.education.pitt.edu/hpa

Degrees Offered

Doctoral

- Exercise Physiology, PhD
  The Department of Health and Physical Activity offers a Doctorate of Philosophy (PhD) in Exercise Physiology. This full-time degree program prepares students for positions at research and doctoral-granting universities and research medical centers. The student works closely with their faculty mentor to develop the appropriate plan of study and research experiences. Current research expertise of the faculty includes the following:
  
  Obesity and Body Weight Regulation
  Prevention and Treatment of Chronic Disease
  Epidemiology of Physical Activity and Chronic Disease
  Physical Activity Programming for Health and Fitness
  Physical Activity for Children and Adolescents
  Technology-Based Interventions for the Prevention and Treatment of Chronic Disease
  Perceptual Responses to Physical Activity and Exercise

- Health and Physical Activity, EdD
  The Department of Health and Physical Activity is addressing a growing need for professionals with training in health, fitness, physical activity programming, clinical application, and research. The EdD ARCO in health and physical activity provides students with an evidence-based education that results in expertise in their chosen field of study. Graduates of this program are prepared to design, implement, and lead health, physical activity, and fitness programs as well as corporate, commercial, hospital, community, and university wellness programs.

Master's

- Health and Fitness- Clinical/Practitioner Focus, MS
- Health and Fitness- Research Focus, MS

These tracks within the Master of Science degree focuses on training students to address the changing landscape related to promotion and study of optimal health and fitness through physical activity. This track will prepare students for careers focusing on healthy lifestyle behaviors and to pursue careers in the health and fitness industry such as directors of corporate, commercial, hospital, community, and university wellness programs.

- Health, Physical Activity, and Chronic Disease - Clinical/Practitioner Focus, MS
Health, Physical Activity, and Chronic Disease- Research Focus, MS

These tracks within the Master of Science degree focuses on training students to address the changing landscape related to chronic disease prevention and treatment, with an emphasis on the promotion and study of physical activity and health. This track will prepare students for careers focusing on prevention and treatment of chronic disease through modification of healthy lifestyle behaviors, and to pursue careers as part of a team of professionals to director prevention and treatment initiatives within hospital, community, commercial, and university settings.

Bachelor's

- BS specializing in Exercise Science

Minors

- Applied Fitness
- Aquatics
- Dance
- Exercise Science

Exercise Physiology, PhD

Exercise Physiology Requirements

- The Plan of Study is to be submitted for Graduate Faculty review in the second semester of doctoral study.
- A minimum of 90 credits is required in the Doctoral Program
- A maximum of 30 credits from the master's degree, plus 9 post master's doctoral level courses may be applied to the doctoral plan of studies.
- A minimum of 15 credits must be at the 3000 level for courses taken at the University of Pittsburgh. Note that only 3 hours can be in a Directed Study or Clinical Internship, and only 3 hours can be in a College Teaching Practicum (enrollment in a College Teaching Practicum Requires Prior Department Approval).

Major Field Health and Physical Activity, Exercise Physiology (30-36 Credits)

Collateral Area (9-18 Credits Minimum)

Courses in academic discipline studies supportive of the candidate's major field of specialization. These credits must be in coursework outside the School of Education.

Research Methodology (15 Credits Minimum)

Minimum requirement is for the student to demonstrate coursework through ANOVA and ANCOVA, and HPA 3400 Advanced Research Methodology

Research Practicum (6 Credits Minimum)

Electives (Credits Variable)

Dissertation (18 Credits Minimum)
PhD Core Curriculum

Methods Courses

Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the methods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a minimum of 5 methods courses: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

- EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
- EDUC 3103 - QUANTITATIVE METHODS 2
- EDUC 3104 - INTRODUCTION TO QUALITATIVE METHODS

First Year Seminar

To further support students' research competencies, PhD students also participate in a school wide first year seminar (EDUC 3102) and EDUC 3105. This seminar meets every other week (1 credit in fall and 2 credits in spring, taken over and above the typical 9 credit course load) and focuses on familiarizing students with practical and ethical issues in research (e.g., necessary clearances for working in schools, resolving questions of authorship and authorship order, human subjects guidelines), and supporting students work on their pre-dissertation proposal (e.g., developing innovative research questions, conducting a literature review).

- EDUC 3102 - FIRST YEAR SEMINAR 1
- EDUC 3105 - FIRST YEAR SEMINAR 2

Additionally, PhD students enroll in writing seminar courses taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

Health and Physical Activity, EdD

EdD Curriculum

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.

The EdD curriculum is delivered in several stages, through a variety methods:

- **Orientation**: The EdD cohort participates in a full-day, on campus, orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.

- **One-week intensive on ramp**: The EdD cohort will participate in a full-week, on campus, experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

- **Hybrid seminars**: You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on campus sessions is required.

**SCHEDULE**

<table>
<thead>
<tr>
<th>Year 1: Summer</th>
<th>Year 1: Fall</th>
<th>Year 1: Spring</th>
<th>Year 1: Summer</th>
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Foundation 1: Becoming a Leader
Scholar Practitioner (3 credits)
*ON-RAMP*
Practitioner Inquiry 1
(3 credits)

Foundation 2: Leadership in Groups
and Organizations (3 credits)
ARCO: Course 1
(3 credits)

Foundation 3: Education
Contexts (3 credits)
ARCO: Course 2
(3 credits)

Foundation 4: Investigating Policy as a
Lever for Change (3 credits)
Practitioner Inquiry 2
(3 credits)

<table>
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<tr>
<th>Year 2: Fall</th>
<th>Year 2: Spring</th>
<th>Year 2: Summer</th>
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<tbody>
<tr>
<td>Supervised Practitioner Inquiry (3 credits)</td>
<td>Practitioner Inquiry 3 (3 credits)</td>
<td>Practitioner Inquiry 4 (3 credits)</td>
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<tr>
<td>ARCO: Course 3 (3 credits)</td>
<td>ARCO: Course 4 (3 credits)</td>
<td>Laboratory of Practice (3 credits)</td>
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<tr>
<th>Year 3: Fall</th>
<th>Year 3: Spring</th>
<th>Year 3: Summer</th>
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<tr>
<td>Guidance in Scholarly Practice (6 credits)</td>
<td>Guidance in Scholarly Practice (6 credits)</td>
<td>Guidance in Scholarly Practice (6 credits)</td>
</tr>
</tbody>
</table>

**CORE COURSES** Credits / Units: 24 Total

**Foundation Courses**
- EDUC 3002 - FOUNDATIONS 1:
- EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS
- EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION
- EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE

**Practitioner Inquiry Courses**
- EDUC 3001 - PRACTITIONER INQUIRY 1
- EDUC 3006 - PRACTITIONER INQUIRY 2
- EDUC 3007 - PRACTITIONER INQUIRY 3
- EDUC 3008 - PRACTICUM INQUIRY 4

**SUPERVISED PRACTITIONER INQUIRY**
Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.
- EDUC 3009 - SUPERVISED PRACTITIONER INQUIRY

**LABORATORY OF PRACTICE**
Students will complete a Laboratory of Practice, a setting where theory and practice inform and enrich each other and facilitate transformative and generative learning that is measured by the development of scholarly expertise and implementation of practice (Carnegie Project on the Education Doctorate, 2010). Students choose from three types of experiences: job embedded, aspirant, or global.
- EDUC 3012 - SUPERVISED INTERNSHIP

**GUIDANCE IN SCHOLARLY PRACTICE**

**Guidance in Scholarly Practice**: Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.

**Portfolio of Scholarly Practice**: The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.
Health and Physical Activity ARCO Curriculum

Health and Physical Activity ARCO Courses

- HPA 3114 - EVIDENCE BASED LIFESTYLE PROGRAM DESIGN AND EVALUATION
- HPA 3115 - HEALTH PROMOTION POLICY AND PROGRAM IMPLEMENTATION
- HPA 3116 - RESOURCE AND FUNDING ACQUISITION FOR HEALTH PROMOTION PROGRAMMING
- HPA 3117 - HEALTH PROMOTION PROGRAM TRANSLATION AND SUSTAINABILITY

Health and Fitness- Clinical/Practitioner Focus, MS

Plan of Study

Students are required to take the following courses:

- HPA 2267 - PHYSIOLOGICAL BASIS-FITNESS AND SPORT CONDITIONING
- HPA 2268 - PHYSICAL ACTIVITY AND HEALTH
- HPA 2269 - OBESITY PREVENTION AND TREATMENT
- HPA 2320 - PSYCHOSOCIAL ASPECTS OF HEALTH
- HPA 2322 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- HPA 2371 - ADVANCED EXERCISE PHYSIOLOGY
- HPA 2374 - EXERCISE TESTING, PRESCRIPTION, AND SUPERVISION
- HPA 2375 - RESEARCH AND EXPERIMENTAL DESIGN IN EXERCISE PHYSIOLOGY
- HPA 2390 - NUTRITION IN SPORT AND EXERCISE
- HPA 2990 - RESEARCH SEMINAR IN HPA
- HPA 2996 - CLINICAL INTERNSHIP
- HPA 3374 - ADVANCED LABORATORY TECHNIQUES

Additional Prerequisites

*Additional prerequisite credits may be required by the department based on the undergraduate training of the applicant.*

Health and Fitness- Research Focus, MS

Plan of Study

Students are required to take the following courses.

- HPA 2267 - PHYSIOLOGICAL BASIS-FITNESS AND SPORT CONDITIONING
- HPA 2268 - PHYSICAL ACTIVITY AND HEALTH
- HPA 2269 - OBESITY PREVENTION AND TREATMENT
- HPA 2371 - ADVANCED EXERCISE PHYSIOLOGY
- HPA 2374 - EXERCISE TESTING, PRESCRIPTION, AND SUPERVISION
- HPA 2375 - RESEARCH AND EXPERIMENTAL DESIGN IN EXERCISE PHYSIOLOGY
- HPA 2390 - NUTRITION IN SPORT AND EXERCISE
• HPA 2410 - STATISTICS IN HPA RESEARCH
• HPA 2990 - RESEARCH SEMINAR IN HPA
• HPA 2998 - DIRECTED STUDY
• HPA 3374 - ADVANCED LABORATORY TECHNIQUES

Additional Prerequisites

*Additional prerequisite credits may be required by the department based on the undergraduate training of the applicant.*

**Health, Physical Activity, and Chronic Disease - Clinical/Practitioner Focus, MS**

**Plan of Study**

• HPA 2268 - PHYSICAL ACTIVITY AND HEALTH
• HPA 2269 - OBESITY PREVENTION AND TREATMENT
• HPA 2320 - PSYCHOSOCIAL ASPECTS OF HEALTH
• HPA 2322 - EVIDENCE BASED HEALTH PROGRAM PLANNING
• HPA 2371 - ADVANCED EXERCISE PHYSIOLOGY
• HPA 2374 - EXERCISE TESTING, PRESCRIPTION, AND SUPERVISION
• HPA 2375 - RESEARCH AND EXPERIMENTAL DESIGN IN EXERCISE PHYSIOLOGY
• HPA 2390 - NUTRITION IN SPORT AND EXERCISE
• HPA 2990 - RESEARCH SEMINAR IN HPA
• HPA 2996 - CLINICAL INTERNSHIP
• HPA 3374 - ADVANCED LABORATORY TECHNIQUES
• HPA 3377 - CHRONIC DISEASE CASE STUDIES

**ELECTIVE**

*Additional prerequisite credits may be required by the department based on the undergraduate training of the applicant.*

**Health, Physical Activity, and Chronic Disease- Research Focus, MS**

**Plan of Study**

• HPA 2268 - PHYSICAL ACTIVITY AND HEALTH
• HPA 2269 - OBESITY PREVENTION AND TREATMENT
• HPA 2371 - ADVANCED EXERCISE PHYSIOLOGY
• HPA 2374 - EXERCISE TESTING, PRESCRIPTION, AND SUPERVISION
• HPA 2320 - PSYCHOSOCIAL ASPECTS OF HEALTH
• HPA 2375 - RESEARCH AND EXPERIMENTAL DESIGN IN EXERCISE PHYSIOLOGY
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• HPA 2990 - RESEARCH SEMINAR IN HPA
• HPA 2998 - DIRECTED STUDY
• HPA 3374 - ADVANCED LABORATORY TECHNIQUES
ELECTIVE

Additional prerequisite credits may be required by the department based on the undergraduate training of the applicant.

Department of Instruction and Learning

The mission of the Department of Instruction and Learning is to provide regional, national, and international leadership in the study and improvement of teaching and learning in diverse educational settings. As part of its effort to carry out this mission, the department offers commonwealth teacher education certification and degree programs.

The department offers the MAT, MEd, MS, EdD, and PhD degrees in instruction and learning as well as various certifications and a graduate certificate in urban education. It has the following. It has the following general areas of study:

- An area of concentration in early childhood education
- An area of concentration in elementary education
- An area of concentration in reading education
- Secondary education certification and areas of concentration in:
  - English and communications education
  - Mathematics education
  - Science education
  - Social studies education
  - Foreign language education
- Special education certification and areas of concentration in:
  - Special Education Teacher Preparation 7-12
  - Applied Behavior Analysis
  - Early intervention for children with disabilities
  - Education of students with mental and physical disabilities
  - Vision studies special education
  - General Special education
- Additional Doctoral Degrees
  - Language, Literacy, and Culture (LLC)
  - Science, Technology, Engineering, and Mathematics (STEM)
- Certificate in Urban Education

A brief section for each of these areas follows. In each section, a link to the program's Web site is provided. Readers interested in a specific program are encouraged to visit that program's Web site for additional information. Please pay special attention to information provided on prerequisite courses and the curriculum.

Contact Information

Department of Instruction and Learning
5300 Wesley W. Posvar Hall
412-624-7254
Fax: 412-648-7081
E-mail: dil@pitt.edu

Degree and Certification Requirements

For additional degree requirement information for many of the following degrees, refer to the school sections on Degree Requirements.
Program Information

Applied Behavior Analysis

The Applied Behavior Analysis (ABA) Program prepares practitioners who are qualified to assess, design, implement, and evaluate ABA programs for a range of populations, but with an emphasis on developmental disabilities and behavioral health issues. Successful completion of the coursework and practicum experiences allows students to seek certification as a Board Certified Behavior Analyst (BCBA) from the Behavior Analysis Certification Board (BACB). With the growing number of children presenting with unique behavioral challenges and requiring additional supports, mental health providers, agencies, and school districts are increasingly seeking the services of professionals with highly specialized training in ABA. The ABA Area of Concentration offers two programs. Supervision of practicum experiences required by the national BACB is also available within the program.

- MEd in Applied Behavior Analysis
  The Applied Behavior Analysis MEd program provides intensive instruction in the theoretical bases of Applied Behavior Analysis as well as the clinical and pedagogical application of the theory and principles. The courses are aimed at special educators and behavioral health providers and are designed to specifically prepare students to apply for the certification examination of the Behavior Analyst Certification Board, Inc (BACB). To become a Board Certified Behavior Analyst (BCBA), the Board requires a Master's degree, approved coursework in Applied Behavior Analysis, and a specified number of supervised practicum hours dependent upon intensity of supervision (750-1500 hours), and successful passage of a national examination following completion of the Master's degree, required coursework, and supervised practicum. Those who are interested should become familiar with the Board's requirements found on its website (http://www.bacb.com). This MEd program offers students the opportunity to pursue the intensive supervised practicum as part of the program's elective courses or students may make other arrangements outside the university to acquire those hours by following the requirements found on the BACB web site.

- Certificate in Applied Behavior Analysis
  The University of Pittsburgh Applied Behavior Analysis Certificate program consists of the coursework required for a national certificate in Applied Behavior Analysis issued by the Behavior Analyst Certification Board (BACB). The program's coursework partially fulfills the requirements to become a Board Certified Behavior Analyst (BCBA).

  Additional requirements include the possession of a master's degree, completion of supervised practicum hours, and successfully passing a national exam. While enrolled in the program, students may also pursue through the university, the intensive supervised practicum to acquire the practicum hours required by the BACB. Those who are interested should become familiar with the Board's requirements found on its website (bacb.com). BCBA pass rates for first-time candidates taking the BCBA exam from the University of Pittsburgh can be found at on the BACB web site.

  This program is specifically designed for:
  
  - Students who already have a Master's degree who wish to obtain a University of Pittsburgh certificate in Applied Behavior Analysis without having to enroll in a degree program; and
  - Students who are enrolled in a graduate program at the University of Pittsburgh other than the MEd in Applied Behavior Analysis who wish to include a certificate in Applied Behavior Analysis as part of or in addition to their degree program

Autism Certificate

The University of Pittsburgh School of Education Autism Certificate is a 15-credit program designed to enrich the knowledge and skills of teachers and other practitioners in the area of autism. The program will focus on the characteristics and etiology of autism; assessment and instructional programming for language/communication, social skills, and academic subjects across settings and grade levels; and family, interagency, and community collaboration.

For those with a Pennsylvania Department of Education Level I or Level II teaching certificate, the program also fulfills the Pennsylvania Department of Education Autism Spectrum Disorders (ASD) Endorsement requirements. The list of possible certifications to which the endorsement might be added includes but is not limited to the following: regular and special education, school psychologist, principal, guidance counselor, speech and language clinician, occupational and physical therapist, reading specialist, and home and school visitor.

The following groups of individuals are encouraged to apply:

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Post-Baccalaureate or Post-Master's students who possess a Pennsylvania Department of Education Level I or Level II teaching certificate and are interested in obtaining the PDE Program Endorsement in Autism

Post-Baccalaureate or Post-Master's students who do not have a teaching certificate, but who are interested in enhancing their credentials in the area of Autism

Degree-seeking Master's students who are currently enrolled in a program that leads to a Pennsylvania Department of Education Level II teaching certificate and who are interested in obtaining the PDE Program Endorsement in Autism

Degree-seeking Master's and Ph.D. students who do not have a teaching certificate, but who are interested in enhancing their credentials in the area of Autism

Master of Special Education with Academic Instruction Certificate (MOSAIC)

The University of Pittsburgh, School of Education, offers a specialization that leads to a Master's Degree in Special Education and dual teaching certificate for grades 7-12 - one in Special Education and one in a Secondary Content Area (English, Math, Science, Social Studies, or Foreign Language Education). Teaching candidates will study evidence based practices to improve adolescent learning through Special Education and Content Area coursework. Candidates will develop their professional teaching skills during practical experiences, in a variety of public middle and high school classrooms. The MOSAIC program is designed to provide future teachers with the skills, knowledge and experiences to be effective teachers of adolescents both with and without disabilities.

MOSAIC Master of Education (MEd) in Special Education with Instructional Certification in both Secondary Special Education and Secondary Content Area (English, Math, Science, Social Studies and Foreign Language Education) Grades 7-12

- Satisfies the requirements for a PA Instructional I Certificate in Special Education Grades 7-12, pending passing scores on PECT Special Ed 7-12 exams and successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430)
- Satisfies the requirements for a PA Instructional I Certificate in a Specified Content Area (English, Math, Science, Social Studies, or Foreign Language) Grades 7-12, pending passing scores on Praxis II exam and successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430)
- Requires completion of 42 credits
- Lasts four consecutive terms for full-time students - Summer II, Fall, Spring, Summer I
- Requires obtaining all Federal and PA state clearances before entering schools
- Requires a full-time practicum experience (5 days per week) at a local school district in both the fall and spring terms. Fall practicum includes content area and low-incidence disabilities placements. Spring practicum includes content area and high-incidence disabilities placements.
- Requires students to successfully complete the Special Education Comprehensive Exam

Early Childhood Education Program

1. MEd in Early Childhood Education

The Early Childhood Education Program focuses on the education of young children (birth to age 8) in public and private schools and centers, homes, and other facilities in which children within this age range are served. Strong emphasis is also placed on developing relationships with the families of young children and working collaboratively with other professionals. The program offers a range of coursework encompassing infants, toddlers, preschoolers, and primary-aged children. Through student teaching, field placements, and practical learning, students develop competence in the use of developmentally appropriate practices. Main themes within the program include understanding and respecting family diversity, supporting families in their roles with young children, and addressing the needs of children with special needs in inclusive settings.

The program is intended for individuals who already have an Early Childhood Education Certificate or whose career paths do not require them to have a certificate. Individuals who complete the post-baccalaureate Early Childhood Education Certification program (Primary Plus) at the University of Pittsburgh may apply up to 18 credits from their certification studies towards the Master of Education program. Application to the M.Ed. program must be made within three years of completing the certification program. Course work in the Master of Education program is intended to enhance the continuing professional development of early childhood teachers beyond the skills and competencies acquired during certification study and to assist them in gaining greater self-determination through heightened awareness and understanding of their own teaching practice.
2. **MEd in Elementary Education**

   This is an online program. For more information about our online programs see Pitt Online.

   The goals of the MEd program are:
   - To enable teachers to enhance both their understanding and ability to meet the needs of the diverse learners in their classrooms.
   - To enable teachers to advance their understanding of one or more content areas.
   - To enable teachers to broaden their understanding of educational research, educational theories as they apply to practice, action research practices, and educational policy.

1. **Primary Plus: PreK-4 Instructional I Teaching Certification**

   The Primary Plus: PreK-4 Teacher Certification Program prepares students to teach young children ages 4-9 in Pre-kindergarten and K-4 classrooms and to work collaboratively with parents and other professionals. Students will develop skills for employment in public and private schools and early childhood centers. Through coursework and field experiences with pre-kindergarteners and children in grades K-4, students will acquire an integrated understanding of academic content and child development in diverse inclusive settings. The program must be completed as a full-time student. No part-time option is available.

   The Primary Plus: PreK-4 Teacher Certification Program is intended for individuals from a wide range of undergraduate degree and work backgrounds. A student who successfully completes the program and passes both the PECT (Pennsylvania Education Certification Test) in PreK-4 and the PA Statewide Evaluation Form for the Student Professional Knowledge and Practice (PDE 430) is eligible to apply for a Pennsylvania Instructional I certificate for PreK-4.

   - prepares qualified graduates for initial certification in PreK-4 Early Childhood Education
   - lasts three consecutive terms for full-time students - Summer II, Fall, Spring
   - requires two full days per week in a PreK practicum and one full day per week at a K-4 student teaching site during Fall Term
   - requires twelve full weeks of student teaching in a K-4 classroom in the Spring term
   - requires obtaining all Federal and PA state clearances before entering schools

   www.education.pitt.edu/earlychilded

**Elementary Education Program**

This is an online program. For more information about our online programs see Pitt Online.

[www.education.pitt.edu/elementaryed](http://www.education.pitt.edu/elementaryed)

**Reading Education Program**

Graduate work in reading Education is available to individuals interested in working toward:

- K-12 reading specialist certification
- Master's degree in reading education

Those interested in doctoral study in the area of literacy should consult information related to the PhD and EdD Language, Literacy, and Culture area of concentration.

This program offers the following degree in instruction and learning with an area of concentration in reading education and certification and specialization options as noted below:

- Master of Education (MEd)
- Master of Education (MEd) + K-12 reading specialist certificate
Secondary Education Areas of Study

The secondary education area of study offers five areas of concentration:

- English and Communications Education
- Foreign Language Education
- Mathematics Education
- Science Education
- Social Studies Education

Within each of these areas of concentration, the student can choose to pursue a Master of Arts (MAT) teaching degree with certification in one area of concentration, or a Master of Education.

English and Communications Education

This program offers the following degrees in instruction and learning with an area of concentration in English and communications education and certification options as noted below:

- Master of Arts in Teaching (MAT)
- Instructional I Certificate

The mission of the MAT and Instructional I Teaching Certification programs in English and Communications Education at the University of Pittsburgh are to prepare secondary English and Communications teachers with content, pedagogical knowledge, and professional knowledge and skills to meet regional and national needs in the areas of literacy learning, language arts, and communication, especially in diverse school settings.

To achieve this mission, our programs follow the National Council of Teachers of English's criteria for highly qualified teachers of English Language Arts by teaching sophisticated content knowledge; current "best practices" in pedagogical and assessment strategies; the developmental trajectories and needs of adolescents from diverse cultural and linguistic backgrounds; culturally responsive and sustaining pedagogy; and professional leadership skills.

- Master of Education (MEd)

At the master's degree level, students may emphasize study in the specialization of English/Language Arts Education. The master's degree options are designed to help beginning and experienced elementary and secondary teachers acquire the concepts, skills, and attitudes of master teachers in their fields.

Students will work with an English Education faculty advisor to develop a Plan of Studies in the major field that combines work in English Education courses, related studies in education, and related electives from across the university.

www.education.pitt.edu/english

Foreign Language Education

Graduate work in the foreign language education area of concentration is available to qualified persons interested in pursuing K-12 Instructional I certification in French, Spanish, German, Latin, Chinese, Japanese, Italian, or Russian.

The following degrees in instruction and learning with an area of concentration in foreign language education and the certification options are defined below:

- Master of Arts in Teaching (MAT)
- Master of Education (MEd)
- Master of Education (MEd) and a University Certificate in the Teaching of English to Speakers of Other Languages (TESOL)

www.education.pitt.edu/foreignlanguage
**Mathematics Education**

This program offers the following degrees in instruction and learning with an area of concentration in mathematics education and secondary school teacher education certification as detailed below:

- Master of Arts in Teaching (MAT)
- Master of Education (MEd)
  The MEd in Mathematics Education is a professional degree for the graduate student who wishes to pursue advanced study in the field. In addition to addressing the needs and interests of beginning and experienced teachers whose objective is to advance their backgrounds as mathematics teachers in schools, the master's degree also prepares students for admission to doctoral study. Students complete a minimum of 36 credits.
- Doctor of Philosophy (PhD)

www.education.pitt.edu/mathematics

**Science Education**

The School of Education offers innovative graduate-level degree and certification options (biology, chemistry, earth and space science, general science, and physics) for science area majors interested in careers in teaching. The certification options in science education prepare the candidate for teaching assignments in grades seven through 12.

This program offers the following degrees in instruction and learning with an area of concentration in science education and certification programs as defined below:

- Master of Arts in Teaching (MAT)
- Master of Education (MEd)
- Doctor of Philosophy (PhD)

www.education.pitt.edu/science

**Social Studies Education**

The social studies education concentration offers courses of study leading to certification for grades seven through 12 and a master's degree.

This program offers the following degrees in instruction and learning with an area of concentration in social studies education and certification options as defined below:

- Master of Arts in Teaching (MAT)
- Master of Education (MEd)
  Our online program is designed to engage you in dynamic discourse, advanced teaching methods, local and regional research, and to contextualize all you learn with your teaching and scholarly experiences in the field of secondary social studies education.

www.education.pitt.edu/socialstudies

**Special Education Area of Study**

The special education area of study within the Department of Instruction and Learning offers a variety of graduate study opportunities to individuals whose career goals include working with people with disabilities.
A master's degree (MEd) in instruction and learning is offered in each of the program's areas of concentration:

- Early Intervention for Children with Disabilities
- Education of Students with Mental and Physical Disabilities
- General Special Education
- Special Education Teacher Preparation
- Vision Studies Special Education

Work toward graduate degrees may be combined with special education teacher certification study, autism enforcement and vision studies. The areas of concentrations include academic and field work for full-time or equivalent part-time study. Field work appropriate to the individual areas is carried out at cooperating schools, agencies, and clinics in Western Pennsylvania.

The program also offers courses of study leading to eligibility for certification as supervisor of special education. At the doctoral level, the program provides opportunities for specialization studies with a particular emphasis on applied behavior analysis, learning disabilities, vision studies, orientation and mobility, or early intervention.

### Early Intervention for Children with Disabilities

This concentration prepares students to teach infants, toddlers, and preschoolers with disabilities from birth to 5 years of age in hospital, home, and center-based settings, to support families of these young children in decision-making and resource identification, and to collaborate with other professionals in service delivery. The degree options are as follows:

www.education.pitt.edu/ei

### Education of Mental and Physical Disabilities

The major goal of the Special Education PhD and Ed.D degree is the preparation of leadership personnel. Graduates must have leadership skills to identify the significant issues of the day and the ability to make decisions about the most effective use of new technologies and information to serve the nation's disabled population. They will also become researchers and scholars committed to furthering the knowledge and empirical base needed for enhancement of special education practice and of the training of special education personnel. Graduates will serve infants, children, youth, and adults with disabilities through roles as teacher educators, researchers, administrators, consultants, and supervisors.

As they have in the past, it is expected that graduates of this program will have a significant impact on the quality of educational opportunities for persons with disabilities by providing leadership for local education agencies, state educational agencies, private foundations and agencies, colleges, and universities.

This option is available for students with at least three years experience in teaching children with Mental and Physical Disabilities. (i.e., learning disabilities, intellectual disabilities, emotional/behavioral disabilities, etc.). The full-time only program requires a minimum of 90 credits of course work including dissertation research.

www.education.pitt.edu/mpd

### Vision Studies Special Education

The vision studies concentration prepares professionals to educate children and adults with visual disabilities. This specialization enables students to acquire dual certification as teachers of children with visual disabilities and/or as Orientation and Mobility (O&M) specialists with a Master of Education degree. In addition, a component of the program provides the student with both didactic and clinical course work in early intervention with children who are blind and visually impaired. Teachers of children with visual disabilities provide instruction in educational placements that include public schools, resource rooms, and full-time classrooms for children with visual disabilities, or in approved private schools. Graduates provide specialized educational services as an itinerant teacher, a full-time classroom teacher, or a teacher consultant with children birth through age 21. O&M specialists provide necessary instruction to visually disabled children and adults to enable safe, independent travel. Training includes...
integrating skills such as orientation in space in conjunction with the use of a long cane, dog guide, or an optical or electronic device. Students in the vision studies specialization participate in both didactic and practicum experiences to gain a broad range of specialty skills.

The vision studies special education concentration offers the applicant a number of degree and certification options:

1. Commonwealth Certification in Vision Education
2. Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP) Certification in Orientation and Mobility (O&M)
3. Dual Certification in Vision Education and O&M
4. MEd in Instruction and Learning with Vision Education Certification
5. MEd in Instruction and Learning with O&M Certification
6. MEd with Dual Certification in Vision Education and O&M

www.education.pitt.edu/visionstudies

General Special Education

Individually designed master's degree specializations (36 credits minimum) are available for those students who hold Pennsylvania special education teaching certificates or for regular educators who just want to learn more about special education. These specializations are designed to accommodate individualized professional goals but do not provide students with special education certification. Students may also pursue study for other certifications and/or other specialized study.

Language, Literacy and Culture

The Language, Literacy, and Culture (LLC) doctoral program brings together four previous doctoral programs in the Department of Instruction and Learning: English Education, Foreign Language Education, Reading Education, and Social Studies Education. LLC takes an inter- and multidisciplinary approach to the study of cultural, linguistic, social, psychological, and political perspectives on educational studies. Changing immigration patterns, the population of K-12 schools, and new empirical and theoretical advances in education together indicate the need for diverse approaches and disciplinary lenses on the fields of teacher education and classroom teaching and learning. The focus is on the examination of educational issues using sociocultural, linguistic and critical theoretical approaches that are rooted in the promotion of equity, social justice and democratic values.

The LLC area of concentration is appropriate for students with backgrounds in subject matter disciplines (such as reading, English education, foreign and second language learning, applied linguistics, and social studies education) as well as for students interested in pursuing the kinds of interdisciplinary studies in instruction and learning listed above. The interdisciplinary emphasis provides students the opportunities to work with a group of dedicated faculty with diverse backgrounds in addition to being matched with an advisor who is appropriate to their interests.

Science, Technology, Engineering and Mathematics EdD

The STEM Doctor of Education (EdD) program is intended for teachers and educators who desire the skills and credentials needed to advance their practice-oriented careers. It offers a rigorous theoretical and practical orientation for scholar practitioners aspiring to become leaders in K-12 schools and institutions of higher learning, in positions such as district curriculum supervisor, faculty member at a teaching-focused university or district leader in the STEM fields. Candidates for the program must have a master's degree in a related field as well as extensive instructional work experience.

Four core courses examine ideas that lie at the intersection of research in STEM (based primarily in mathematics and science education) in the areas of Curriculum, Instruction, Assessment and Professional learning. Across these courses are threaded considerations of Equity (issues of fairness and justice in how people are treated and of how to provide access and opportunity to all learners), Policy (how policies are created, interpreted, and enacted, and their relationship to educational practice), Methodology (different procedures for studying educational phenomena in STEM education research and their implications) and Theories of learning (different perspectives on how people learn and their influence on instructional decision-making).
Supervisor of Special Education Certificate

Applications of the Supervisor of Special Education Certificate were on hold for the incoming 2018-19 academic year.

This certification option in special education is built on the assumption that most supervisory operations in education are, in principle, generic, with their fundamentals of theory and practice in common. The major distinguishing characteristic of this option is the application of supervisory theory to the context of the special education of exceptional children and youth. Specific emphasis is placed upon activities, relationships, facilities, agencies, persons, and processes that are peculiar to or have particular relevance to special education. The student completes a plan of studies encompassing such courses as supervision, curriculum development, current and legal issues in the specialization, and a supervision internship.

Urban Education

The School of Education Post-Baccalaureate Certificate in Urban Education addresses the social-emotional and learning needs of diverse students in urban schools locally and nationally in an effort to achieve greater equity in opportunity and experience. The program enrolls both preservice and in-service teachers.

The Urban Education certificate program aims to increase a teacher's level of effectiveness for their students in urban schools as well as increasing their marketability and longevity in the field. The certificate program is built upon the following themes developed through asset-based knowledge, understanding, attitudes, dispositions, beliefs, skills and practices:

- Social/Cultural/Relational Dynamics - deeply understanding our students, their families and communities, to best develop meaningful relationships from which to learn and teach.
- Authentic Teacher Self-Excavation - teachers deeply understanding themselves and their impact on students.
- Pedagogical/Curricular/Classroom Learning and Dynamics - deeply understanding and creating positive, responsive, effective classroom student experiences.

The program leads to a University Certificate in Urban Education and does not lead to commonwealth certification.

Certificate Requirements

The Certificate in Urban Education is a 15-credit program. Students are required to apply to the certificate program. They must have earned a baccalaureate degree at an accredited institution and meet the University's requirements for admission to graduate school. Applicants need not be concurrently enrolled in a graduate degree program in the School of Education.

For additional degree requirement information, refer to the Center for Urban Education website and the Department of Instruction and Learning website.

Vision Education

- Doctor of Philosophy (PhD)

The goal of the Blindness/Vision Impairment/Orientation and Mobility PhD degree is the preparation of leadership personnel to assume academic faculty positions at the university level. The focus of preparation for the PhD program is on teaching graduate and undergraduate courses, mentoring graduate students, developing a research agenda that will result in funded and published research and translating research outcomes for the improvement of educational and related service programs for individuals with disabilities. PhD candidates are mentored by a faculty adviser who shares their research interests and are supported by graduate faculty in Special Education. Students may focus their studies in one or more of the following areas: blindness, vision impairments, or orientation and mobility. The PhD program is writing and research-intensive and PhD candidates will have multiple opportunities to learn and participate in the review of research literature, the preparation and submission of research grant proposals, the design and implementation of research studies, and the preparation and dissemination of research reports.
Master of Education (MEd)
The School of Education at the University of Pittsburgh requires all students pursuing a Master's of Education degree (MEd) to complete a minimum of 36-credits, 12 of which are the required graduate-level general education courses listed.

Applicants may choose to pursue the MEd degree through a variety of options (with or without certification):

- MEd degree with single certification as a Teacher of Students with Visual Impairments (TVI)
- MEd degree with single certification as an Orientation and Mobility (O&M) Specialist
- MEd degree with dual certification (TVI and O&M)
- MEd degree without certification but with a Vision Studies Area of Concentration

Students pairing the degree in combination with any certification option will complete additional credits hours to fulfill program requirements. Additionally, the MEd program requires students to successfully complete the Vision Studies Comprehensive Exam. The Comprehensive Exam is a proctored three-hour exam based on the student's area of concentration and is completed towards the end of their MEd degree program.

Single Certification - Teacher of Students with Visual Impairments (TVI)
The University of Pittsburgh, School of Education Vision Studies Program offers a hybrid program of study (online and on-campus) to prepare professionals to serve the educational needs of children who are blind or visually impaired. TVIs provide educational services to students' birth to 21 in a variety of educational settings, which include early intervention or preschools, public school classrooms, resource rooms, specialized schools, or the home. Graduates provide direct assessment and instruction in vision-specific subject areas.

The TVI certification courses are typically offered in a two-course per term pairing. Students may also combine a Master's of Education (MEd) degree with their TVI certification program. For additional curriculum details regarding this combination, please see the MEd degree with single certification as a Teacher of Students with Visual Impairments (TVI).

TVI certification allows the teacher to provide educational services needed by students who are blind or visually impaired. These services include:

- Assessing and evaluating educational strengths and needs including educational functional vision assessments
- Recommending appropriate service delivery plans
- Providing training in the use of adapted materials and devices
- Consulting with classroom teachers and parents regarding the impact of visual impairment on development and learning
- Direct instruction in:
  - Compensatory Academic Skills
  - Career Exploration
  - Sensory Efficiency Skills
  - Social Skills
  - Assistive Technology
  - Recreation and Leisure and activities
  - Self-Determination Skills
  - Techniques of Daily Lives

Single Certification - Orientation and Mobility (O&M)
The University of Pittsburgh, School of Education Vision Studies Program offers a hybrid program of study (online and on-campus) to prepare professionals to serve the orientation and mobility (O&M) needs of children and adults who are blind or visually impaired. O&M Specialists provide the necessary instruction for safe, independent travel. The Vision Studies Program provides graduate students with competencies necessary to teach individuals from early childhood through adulthood. Training includes integrating skills such as orientation in space with the appropriate selection and use of mobility devices and/or optical devices for utilization of residual vision.

The O&M certification courses are offered online during the Fall and Spring semesters, as well as on-campus during the Summer. Students may also combine a Master's of Education (MEd) degree with their O&M certification program. For additional curriculum details regarding this combination, please see the MEd degree with single certification as an Orientation and Mobility (O&M) Specialist.

Graduates are eligible for national certification as an O&M Specialist by the Academy for Certification of Vision Rehabilitation & Education Professionals (ACVREP). With this certification, the graduate is qualified to provide O&M services needed by children and adults who are blind or visually impaired in public schools, rehabilitation agencies, Veteran's Administration hospitals. With this certification, the graduate is qualified to provide educational and rehabilitation services. These services include:

- Assessing and evaluating O&M strengths and needs including O&M functional vision assessment
Recommending appropriate service delivery plans

Providing training in the use of mobility materials and devices (e.g. prescriptive cane, optical and non-optical devices, dog guide, and electronic devices)

Consulting with other education and rehabilitation personnel and family regarding the impact of blindness and visual impairment on the O&M process

Direct instruction in:
  - Utilization of mobility devices
  - Gross motor development
  - Visual efficiency skills
  - Concept and sensory development
  - Utilization of residual vision
  - Spatial orientation
  - Instruction in travel in both indoor and outdoor environments
  - Utilization of mass transportation systems
  - Communication and social skills
  - Self-determination skills
  - Utilization of tactile, visual, and auditory maps
  - Familiarization to familiar and unfamiliar environments

Dual Certification - TVI and O&M

Applied Behavior Analysis

Education of Mental and Physical Disabilities, PhD

The University of Pittsburgh School of Education's Doctor of Philosophy (PhD) programs prepare students to be nationally competitive and highly qualified for research careers in both academic and non-academic institutions. Our full-time, research-intensive PhDs produce scholars who demonstrate excellent writing and research skills, independent scholarship and productivity, and proficiency in teaching. Under the guidance of our distinguished graduate faculty, students will have the opportunity to produce peer-reviewed publications, present at professional conferences, and collaborate on grant-writing and review, positioning them to excel in their careers as researchers and faculty. Because the PhDs are full-time, students can be fully immersed in their coursework and research in preparation for an impactful scholarly career.

Special Education - Doctor of Philosophy (PhD)

The goal of the Special Education PhD degree is the preparation of leadership personnel to assume academic faculty positions at the university level. The focus of preparation for the PhD program is on teaching graduate and undergraduate courses, mentoring graduate students, developing a research agenda that will result in funded and published research and translating research outcomes for the improvement of educational and related service programs for children and youth with disabilities. PhD candidates are mentored by a faculty adviser who shares their research interests and are supported by graduate faculty in Special Education. Students may focus their studies in one or more of the following areas: applied behavior analysis, autism, emotional and behavior disorders, learning disabilities, or severe disabilities. The PhD program is writing and research-intensive and PhD candidates will have multiple opportunities to learn and participate in the review of research literature, the preparation and submission of research grant proposals, the design and implementation of research studies, and the preparation and dissemination of research reports. A limited amount of financial assistance in the form of doctoral fellowships is available for full time students on a competitive basis.
PhD Core Curriculum

Methods Courses

Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the methods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a minimum of 5 methods courses: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

- EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
- EDUC 3103 - QUANTITATIVE METHODS 2
- EDUC 3104 - INTRODUCTION TO QUALITATIVE METHODS

First Year Seminar

To further support students' research competencies, PhD students also participate in a school wide first year seminar (EDUC 3102 and EDUC 3105). This seminar meets every other week (1 credit in fall and 2 credits in spring, taken over and above the typical 9 credit course load) and focuses on familiarizing students with practical and ethical issues in research (e.g., necessary clearances for working in schools, resolving questions of authorship and authorship order, human subjects guidelines), and supporting students work on their pre-dissertation proposal (e.g., developing innovative research questions, conducting a literature review).

- EDUC 3102 - FIRST YEAR SEMINAR 1
- EDUC 3105 - FIRST YEAR SEMINAR 2

Additionally, PhD students enroll in writing seminar courses taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

Education of Mental and Physical Disabilities Requirements

The major goal of the Special Education PhD and Ed.D degrees is the preparation of leadership personnel. Graduates must have leadership skills to identify the significant issues of the day and the ability to make decisions about the most effective use of new technologies and information to serve the nation's disabled population. They will also become researchers and scholars committed to furthering the knowledge and empirical base needed for enhancement of special education practice and of the training of special education personnel. Graduates will serve infants, children, youth, and adults with disabilities through roles as teacher educators, researchers, administrators, consultants, and supervisors.

Students complete either a PhD or Ed.D in Special Education with a particular emphasis in learning disabilities, deaf and hard of hearing, vision studies, orientation and mobility, or early intervention. As they have in the past, it is expected that graduates of this program will have a significant impact on the quality of educational opportunities for persons with disabilities by providing leadership for local education agencies, state educational agencies, private foundations and agencies, colleges, and universities.

This option is available for students with at least three years experience in teaching children with Mental and Physical Disabilities. (i.e., learning disabilities, mental retardation, etc.). Students may choose between the Ph.D. or Ed.D. Both programs require a minimum of 90 credits of coursework including dissertation research. The Ph.D. requires a one year research residency on campus.

Language, Literacy and Culture, EdD

EdD Curriculum

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.
The EdD curriculum is delivered in several stages, through a variety methods:

- **Orientation:** The EdD cohort participates in a full-day, on campus, orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.

- **One-week intensive on ramp:** The EdD cohort will participate in a full-week, on campus, experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

- **Hybrid seminars:** You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on campus sessions is required.

### SCHEDULE

<table>
<thead>
<tr>
<th>Year 1: Summer</th>
<th>Year 1: Fall</th>
<th>Year 1: Spring</th>
<th>Year 1: Summer</th>
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</thead>
<tbody>
<tr>
<td><strong>Foundation 1:</strong> Becoming a Leader Scholar Practitioner (3 credits)</td>
<td><strong>Foundation 2:</strong> Leadership in Groups and Organizations (3 credits)</td>
<td><strong>Foundation 3:</strong> Education Contexts (3 credits)</td>
<td><strong>Foundation 4:</strong> Investigating Policy as a Lever for Change (3 credits)</td>
</tr>
<tr>
<td><strong>ON-RAMP</strong></td>
<td><strong>ARCO: Course 1</strong> (3 credits)</td>
<td><strong>ARCO: Course 2</strong> (3 credits)</td>
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<tr>
<td><strong>Practitioner Inquiry 1</strong> (3 credits)</td>
<td><strong>Practitioner Inquiry 2</strong> (3 credits)</td>
<td><strong>Practitioner Inquiry 3</strong> (3 credits)</td>
<td><strong>Practitioner Inquiry 2</strong> (3 credits)</td>
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<tr>
<th>Year 2: Fall</th>
<th>Year 2: Spring</th>
<th>Year 2: Summer</th>
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<tbody>
<tr>
<td><strong>Supervised Practitioner Inquiry</strong> (3 credits)</td>
<td><strong>Practitioner Inquiry 3</strong> (3 credits)</td>
<td><strong>Practitioner Inquiry 4</strong> (3 credits)</td>
</tr>
<tr>
<td><strong>ARCO: Course 3</strong> (3 credits)</td>
<td><strong>ARCO: Course 4</strong> (3 credits)</td>
<td><strong>Laboratory of Practice</strong> (3 credits)</td>
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<tr>
<th>Year 3: Fall</th>
<th>Year 3: Spring</th>
<th>Year 3: Summer</th>
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<tbody>
<tr>
<td><strong>Guidance in Scholarly Practice</strong> (6 credits)</td>
<td><strong>Guidance in Scholarly Practice</strong> (6 credits)</td>
<td><strong>Guidance in Scholarly Practice</strong> (6 credits)</td>
</tr>
</tbody>
</table>

### CORE COURSES Credits / Units: 24 Total

**Foundation Courses**
- EDUC 3002 - FOUNDATIONS 1:  
- EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS  
- EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION  
- EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE

**Practitioner Inquiry Courses**
- EDUC 3001 - PRACTITIONER INQUIRY 1  
- EDUC 3006 - PRACTITIONER INQUIRY 2  
- EDUC 3007 - PRACTITIONER INQUIRY 3  
- EDUC 3008 - PRACTICUM INQUIRY 4

**SUPERVISED PRACTITIONER INQUIRY**
Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.
EDUC 3009 - SUPERVISED PRACTITIONER INQUIRY

LABORATORY OF PRACTICE
Students will complete a Laboratory of Practice, a setting where theory and practice inform and enrich each other and facilitate transformative and generative learning that is measured by the development of scholarly expertise and implementation of practice (Carnegie Project on the Education Doctorate, 2010). Students choose from three types of experiences: job embedded, aspirant, or global.

EDUC 3012 - SUPERVISED INTERNSHIP

GUIDANCE IN SCHOLARLY PRACTICE

Guidance in Scholarly Practice: Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.

Portfolio of Scholarly Practice: The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.

EDUC 3099 - GUIDANCE IN DOCTORAL DEGREE

Language, Literacy and Culture Curriculum

Language, Literacy and Culture ARCO Courses

- IL 3012 - CRITICAL READING IN LANGUAGE LITERACY AND CULTURE 1
- IL 3013 - CRITICAL READINGS IN LANGUAGE, LITERACY, AND CULTURE 2
- IL 3014 - THEORETICAL PERSPECTIVES IN LANGUAGE, LITERACY AND CULTURE 1
- IL 3015 - THEORETICAL PERSPECTIVES IN LANGUAGE, LITERACY AND CULTURE 2

Language, Literacy and Culture, PhD

The Language, Literacy, and Culture (LLC) PhD is for students who aim to conduct research on the interconnection of culture, language, and literacy in both formal and informal educational settings. The goal of the LLC program is to develop interdisciplinary knowledge complemented by specialized knowledge of teaching and learning in foreign and second language, literacy, social studies, and early childhood education. We frame the exploration of teaching and learning within perspectives that promote equity, social justice, and democratic values.

Faculty and students in our program study issues such as:

- Civic education and racial identity among disenfranchised populations
- Critical historiography in secondary social studies classrooms
- Sociocultural approaches to foreign and second language acquisition
- Comprehension instruction in the context of text-based discussions of informational texts
- Writing, language, and grammar instruction in high school English classrooms
- New and multiple literacies in urban classrooms
- Representations in children's literature
- Immigrant families' home literacy practices

Faculty are actively involved in collaborations within the University of Pittsburgh World History Center; Center for Urban Education; Women's Studies; College of Arts and Sciences; Center for Race and Social Problems; and with University Prep, a 6-12 partnership school; and Falk School, a K-8 laboratory school.

As members of the LLC community, students engage closely with and learn from faculty who conduct research in the field and have a strong commitment to high-quality teaching. Through a combination of coursework, research collaborations with faculty, and teaching and supervision practicum experiences, students prepare for careers in research and teaching universities, research institutes, educational non-profits, and educational consulting.
The PhD in Language, Literacy, and Culture includes a core set of courses designed to engage students in an exploration of teaching and learning from a variety of perspectives: linguistic, critical, psychological, historical, and sociocultural.

LLC PhD Handbook

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Major Field Studies</td>
<td>30-36</td>
</tr>
<tr>
<td>At least 15 credits must be at the 3000 level</td>
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<tr>
<td>Supervised Research Practice</td>
<td>6</td>
</tr>
<tr>
<td>Minor Field Area</td>
<td>9-18 minimum</td>
</tr>
<tr>
<td>Research Methods</td>
<td>12 minimum</td>
</tr>
<tr>
<td>Electives</td>
<td>Variable</td>
</tr>
<tr>
<td>Doctoral Dissertation Research</td>
<td>18</td>
</tr>
<tr>
<td>Total Required Credits</td>
<td>90</td>
</tr>
</tbody>
</table>

Curriculum

PhD students in the Language, Literacy, and Culture program who enter the program without a Masters degree in a relevant field are required to take eight to nine courses within the major field of LLC, five research methods courses, six courses in a cognate (supporting) field, the first year seminar, annual writing workshops, and elective courses as needed. Students with a Masters degree in a related field can transfer credits toward the PhD with approval by the LLC faculty. PhD students are also required to complete one research practicum and one teaching practicum. Furthermore, all PhD students are required to be full-time students. PhD students must successfully pass required doctoral milestone projects in order to continue in the program. The PhD program culminates with completion of a doctoral dissertation.

Major Field (24-27 Credits - 15 credits minimum at 3000 level.
(If a doctoral-level course from a department other than DIL is numbered in the 2000, it can count as a 3000 level course on the plan of studies.)
IL 3248 (required)

Cognate Field (0, 9 or 18 Credits)
Courses in academic discipline studies supportive of the candidate's area of specialization. These credits must be in coursework outside of the School of Education.

Research Methods (15 credits)
EDUC 3104 (required)
EDUC 3100 (required)
EDUC 3105 (required)
Doctor of Philosophy (PhD) Degree Requirements

The Doctor of Philosophy degree in the School of Education is a research-intensive training model that prepares students to be nationally competitive for research careers in both academic and non-academic institutions.

Admissions requirements include the GRE for both national and international applicants. International students require a minimum of 100 or higher TOEFL composite score with sub-scores of 21 or higher or 7.0 IELTS with sub-scores of 6.0 or higher. After screening, a small group of applicants will be interviewed prior to a final decision. Only applicants committed to full-time study will be considered (except in unusual circumstances where the applicant works in a setting where research opportunities are available such as a research assistant on a funded project at a research institute).

Plan of Studies

Prior to advancement to the formal stage called Doctoral Study, the student, in consultation with the academic advisor, must complete a plan of studies that conforms to program requirements. The plan of studies, approved by the academic advisor, the program coordinator, and department is filed in the Office of Admissions and Enrollment Services.

PhD students are required to file a Plan of Studies during the first year in the program. In formulating the doctoral Plan of Studies, both the student and the academic advisor must pay close attention to these School of Education requirements as well as requirements specific to the particular program or department in which the degree specialization is taken. It is the responsibility of the student to learn particular requirements from the academic advisor. The completion of requirements for the doctorate must be satisfied through registration at the University of Pittsburgh.

Courses approved for transfer credit must be listed individually on the plan of studies. Also, when a student plan of studies lists directed study credits, a directed study agreement form must be completed, signed by both the student and faculty supervisor, and submitted for each directed study at the time of registration. Forms are available from the department.

Any changes in the plan of studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed with the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved plan of studies.

Credit Requirements

The PhD degree requires a minimum of 90 credits in a degree program beyond the baccalaureate, distributed as follows: a minimum of 72 course credits (including transfer credits) and a minimum of 18 dissertation credits. Doctoral-level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study if approved on a plan of studies. Generally, courses numbered below 2000 do not meet the minimum requirements for doctoral study. Exceptions require the approval of the program or department. No lower-level undergraduate course (numbered 0001-0999) may be applied toward a doctoral degree. Department and program websites list specific degree requirements.
Acceptance of Transfer Credits

PhD students apply a maximum of 30 post-baccalaureate credits for transfer from other institutions in keeping with University-wide requirements (see Acceptance of Transfer Credits). Both applicants for admission and continuing University of Pittsburgh doctoral students seeking acceptance of transfer credits toward a doctoral degree must submit their transcripts with a completed "Course Credits Accepted" form, available on the School of Education website. When approved, transfer credits must appear on the student's Plan of Studies. The registrar, after notification of acceptance of transfer credits, will enter the individual transfer credits on the student's transcript. Grades (and quality points) are not recorded for credits accepted by transfer.

Each course transferred must meet the following conditions:

- The course grade must be at least B (GPA = 3.00) or its equivalent.
- The course must be judged relevant to a student's doctoral Plan of Studies by the program or department.
- The course must be approved for equivalent graduate degrees at the accredited institution, extension, or off-campus center of other institutions at which the course was taken.

The completion of requirements for the doctorate must be satisfied through registration at the University of Pittsburgh. However, under certain circumstances, a student may earn in an accredited graduate institution other than the University of Pittsburgh a limited number of credits toward a doctoral degree.

Doctoral students desiring to take courses at another institution following admission to the University of Pittsburgh should review the course descriptions and receive approval from their academic advisors and program or department prior to registering for those courses if they wish to ensure that these credits will be acceptable for transfer.

Residency

PhD students are required to be enrolled for full-time study, including involvement in research activities.

Supporting Field

PhD students are required to complete a minimum of nine credits in an academic discipline outside of education. This requirement may be met in one of three ways:

1. For a student who does not have a bachelor's degree or an equivalent number of credits to that for a bachelor's degree in an appropriate academic discipline, a minimum of 18 credits must be taken outside the School of Education in one field or in an interdisciplinary concentration (e.g., Latin American Studies or psycholinguistics) as approved by the program or department. No more than 6 of these credits may be used to satisfy research methodology requirements.

2. For a student who has a bachelor's degree or an equivalent number of credits for a bachelor's degree in an academic discipline, a minimum of 9 credits must be taken outside the School of Education in one field or in an interdisciplinary concentration as approved by the program or department. None of the 9 credits may be used to satisfy research methodology requirements.

3. For a student who has a master's degree or an equivalent number of credits toward a master's degree in a relevant academic discipline outside of education, no additional credits outside the School of Education need to be taken.

Supervised Research

PhD students are required to complete a supervised research experience that results in a written report of the experience. Enrollment for six credits of supervised research, internship, practicum, or directed study is required.

Statute of Limitations

From the student's initial registration for doctoral study at the University of Pittsburgh, all requirements for the PhD must be completed within a period of 10 years (or 8 years if the student has received credit for a master's degree appropriate to the field of study).

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

Doctoral Preliminary Evaluation
Each doctoral student is required to take a preliminary evaluation designed to assess the breadth of the student's knowledge of the discipline, the student's achievement during the initial phase of graduate study, and the student's potential to apply research methods independently. The preliminary evaluation is administered by the program or department to which the student has been admitted. Procedures of administration are available from the program or department.

**Advancement to Doctoral Study**

To advance to doctoral study, a student must:

- be admitted to full graduate status;
- have completed at least 15 post-master's graduate credits at the University of Pittsburgh;
- have earned a GPA of at least 3.30 (transfer credits not considered) in post-master's graduate study at the University of Pittsburgh;
- have a Plan of Studies approved by the academic advisor and the program coordinator on file in the Office of Admissions and Enrollment Services; and
- have passed the doctoral preliminary evaluation.

**Comprehensive Examination**

After advancement to doctoral study, each doctoral student is required to take a comprehensive examination. The comprehensive examination is constructed, administered, and scored by the department or program to which the student has been admitted. Procedures and schedules of administration are available from the department or program.

A student must be registered in the term during which the comprehensive examination is taken. In no case may the student be graduated in the same term in which the comprehensive examination is taken. After the comprehensive examination is passed, the student has the remaining time specified by the statute of limitations to complete all remaining doctoral degree requirements. Satisfactory completion of the doctoral comprehensive examination requirement is part of the demonstration of doctoral competency.

Ordinarily, students do not register for dissertation credits until they have passed the comprehensive examination.

**Doctoral Competency**

Each doctoral student is required to demonstrate doctoral competency by satisfactorily completing the supervised research requirement and doctoral comprehensive examination. The form certifying that a student has demonstrated doctoral competency is initiated by the student's academic advisor, signed by the academic advisor, the program coordinator, and the department chairperson, and then sent to the Office of Admissions and Enrollment Services. The dean/associate dean notifies the student that doctoral competency has been demonstrated.

**Doctoral Committee**

For the PhD student, the doctoral committee consists of the research advisor and at least three other members, including one member from another department outside the School of Education at the University of Pittsburgh or from an appropriate graduate program outside education at another academic institution. The research advisor and a majority of the total committee must be full or adjunct members of the graduate faculty of the University of Pittsburgh. Current graduate faculty membership may be found on the University's Institutional Research website.

The program faculty, the department chairperson, and the dean/associate dean must approve membership on and subsequent changes in the doctoral committee. After the program has approved the doctoral committee, the research advisor initiates the "Proposed Doctoral Committee" form to obtain the signatures of the program coordinator, the department chairperson, and the dean/associate dean. The dean/associate dean must give final approval of the doctoral committee before the overview examination may be scheduled.

**Dissertation Overview**

The dissertation overview is a written proposal and must be presented to the doctoral committee for approval after doctoral competency has been demonstrated.

**The Overview Examination**

The overview examination is conducted by the doctoral committee, is chaired by the research advisor, and is open to any faculty member of the graduate faculty of the University wishing to attend. Although any faculty member may participate in the examination, only members of the doctoral committee may be present during the final deliberation and vote on approving the overview. Each member of the doctoral committee must sign the
overview form and vote on approving the overview. The committee must unanimously approve the overview in order for the student to be advanced to doctoral candidacy.

Dissertation

*Students should review the information detailed under Dissertation and Abstract and Final Oral Examination for University-wide regulations regarding dissertations and dissertation defenses.* School of Education-specific rules follow:

The Dissertation Defense

The same rules apply here as detailed under The Overview Examination above.

Vote on the Dissertation Defense

Each member of the doctoral committee must sign the dissertation defense form and vote to pass or fail the student on the dissertation defense. If the decision of the committee is not unanimous, the case is referred to the dean/associate dean for resolution.

Submission Requirements and Fees

For general information concerning preparation of the dissertation, refer to the ETD website.

At least one week prior to the end of the term, the dissertation is submitted in final form to the Office of Admissions and Enrollment Services along with the following materials:

- Signed dissertation defense form
- Signed ETD approval form
- Two copies of the dissertation abstract initialed by the research advisor
- Completed ProQuest Agreement forms
- Completed Survey of Earned Doctorate form
- Receipt from the Student Payment Center for payment of the dissertation processing fee
- Two copies of the title page

Information concerning requirements for preparing the abstract, the forms to be completed, and the amount of the fees to be paid is available in the Office of Admissions and Enrollment Services. The dissertation and abstract will be examined there to see that they are prepared in an acceptable form and style. For dissertation preparation style information refer to the ETD Format Guidelines. Questions not answered in these documents regarding form and/or style will be referred to the dean/associate dean for review and final decision.

Mathematics Education, PhD

The Doctor of Philosophy (PhD) in mathematics education emphasizes the development of scholarly attainment in the theory, research, and practice of mathematics education. Graduates of this program are prepared to be faculty members in research-focused colleges or universities, researchers in non-academic institutions, or leaders in schools, universities, research facilities or other settings in which mathematics education takes place. From the beginning of the program, students have opportunities to work with faculty in research activities, eventually developing their own lines of interest, which they pursue through the dissertation phase and beyond. Currently, potential areas of work include studying student and teacher learning, particularly in urban settings, with respect to race and other issues of equity-including identifying mathematics instructional practices that provide high-quality learning opportunities to all students; studying how teachers can be supported to develop high-quality and equitable forms of practice; and understanding how students' and teachers' learning is influenced by the larger institutional settings in which they study and work.

Doctor of Philosophy Degree

PhD Core Curriculum

Methods Courses
Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the methods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a minimum of 5 methods courses: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

- EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
- EDUC 3103 - QUANTITATIVE METHODS 2
- EDUC 3104 - INTRODUCTION TO QUALITATIVE METHODS

First Year Seminar

To further support students' research competencies, PhD students also participate in a school wide first year seminar (EDUC 3102) and EDUC 3105). This seminar meets every other week (1 credit in fall and 2 credits in spring, taken over and above the typical 9 credit course load) and focuses on familiarizing students with practical and ethical issues in research (e.g., necessary clearances for working in schools, resolving questions of authorship and authorship order, human subjects guidelines), and supporting students work on their pre-dissertation proposal (e.g., developing innovative research questions, conducting a literature review).

- EDUC 3102 - FIRST YEAR SEMINAR 1
- EDUC 3105 - FIRST YEAR SEMINAR 2

Additionally, PhD students enroll in writing seminar courses taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

Science Education, PhD

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Field Studies</td>
<td>30-36</td>
</tr>
<tr>
<td>At least 15 credits must be at the 3000 level</td>
<td></td>
</tr>
<tr>
<td>Supervised Research Practice</td>
<td>6</td>
</tr>
<tr>
<td>Minor Field Area</td>
<td>9-18 minimum</td>
</tr>
<tr>
<td>Research Methods</td>
<td>12 minimum</td>
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<tr>
<td>Electives</td>
<td>Variable</td>
</tr>
<tr>
<td>Doctoral Dissertation Research</td>
<td>18</td>
</tr>
<tr>
<td>Total Required Credits</td>
<td>90</td>
</tr>
</tbody>
</table>

Doctor of Philosophy Degree

The Doctor of Philosophy (PhD) in mathematics and science education emphasizes the development of scholarly attainment in the theory, research, and practice of mathematics and science education. Graduates of this program are prepared to be faculty members in research-focused colleges or universities, researchers in non-academic institutions, or leaders in schools, universities, research facilities or other settings in which mathematics and science education takes place. From the beginning of the program, students have opportunities to work with faculty in research activities, eventually developing their own lines of interest, which they pursue through the dissertation phase and beyond. Currently, potential areas of work include studying student and teacher learning, particularly in urban settings. In this work we aim to identify mathematics or science instructional practices
that provide high-quality learning opportunities to all students; study how teachers can be supported to develop high-quality and equitable forms of practice; and understand how students' and teachers' learning is influenced by the larger institutional settings in which they study and work.

**PhD Core Curriculum**

**Methods Courses**

Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the mentods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a minimum of 5 methods courses: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

- EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
- EDUC 3103 - QUANTITATIVE METHODS 2
- EDUC 3104 - INTRODUCTION TO QUALITATIVE METHODS

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To further support students' research competencies, PhD students also participate in a school wide first year seminar (EDUC 3102) and EDUC 3105). This seminar meets every other week (1 credit in fall and 2 credits in spring, taken over and above the typical 9 credit course load) and focuses on familiarizing students with practical and ethical issues in research (e.g., necessary clearances for working in schools, resolving questions of authorship and authorship order, human subjects guidelines), and supporting students work on their pre-dissertation proposal (e.g., developing innovative research questions, conducting a literature review).

- EDUC 3102 - FIRST YEAR SEMINAR 1
- EDUC 3105 - FIRST YEAR SEMINAR 2

Additionally, PhD students enroll in writing seminar courses taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

**Special Education, EdD**

**EdD Curriculum**

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.

The EdD curriculum is delivered in several stages, through a variety methods:

- **Orientation**: The EdD cohort participates in a full-day, on campus, orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.

- **One-week intensive on ramp**: The EdD cohort will participate in a full-week, on campus, experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

- **Hybrid seminars**: You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on campus sessions is required.

**SCHEDULE**
### CORE COURSES
Credits / Units: 24 Total

#### Foundation Courses
- EDUC 3002 - FOUNDATIONS 1: ON-RAMP
- EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS
- EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION
- EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE

#### Practitioner Inquiry Courses
- EDUC 3001 - PRACTITIONER INQUIRY 1
- EDUC 3006 - PRACTITIONER INQUIRY 2
- EDUC 3007 - PRACTITIONER INQUIRY 3
- EDUC 3008 - PRACTICUM INQUIRY 4

#### SUPERVISED PRACTITIONER INQUIRY
Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.
- EDUC 3009 - SUPERVISED PRACTITIONER INQUIRY

#### LABORATORY OF PRACTICE
Students will complete a Laboratory of Practice, a setting where theory and practice inform and enrich each other and facilitate transformative and generative learning that is measured by the development of scholarly expertise and implementation of practice (Carnegie Project on the Education Doctorate, 2010). Students choose from three types of experiences: job embedded, aspirant, or global.
- EDUC 3012 - SUPERVISED INTERNSHIP

#### GUIDANCE IN SCHOLARLY PRACTICE

**Guidance in Scholarly Practice:** Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.
Portfolio of Scholarly Practice: The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.

- EDUC 3099 - GUIDANCE IN DOCTORAL DEGREE

Special Education ARCO Curriculum

Special Education ARCO Courses
- IL 3541 - WEB INSTRNL PRACTICES SP EDUC
- IL 3542 - WEB CURRNT ISSUES & TRENDS SP ED
- IL 3590 - RESEARCH SEMINAR IN SPECIAL EDUCATION
- IL 3928 - WEB LEGL & LEGISLTV FDS OF SP ED

Early Intervention, PhD

PhD Core Curriculum

Methods Courses
Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the methods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a minimum of 5 methods courses: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

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- EDUC 3102 - FIRST YEAR SEMINAR 1
- EDUC 3105 - FIRST YEAR SEMINAR 2

Additionally, PhD students enroll in writing seminar courses taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

Requirements

- IL 3509 - ADV SEMINAR: EARLY INTERVENTION

Note:
The remaining major field area courses are chosen according to the interests and background of the candidate.

Research Methodology and Practicum (18 credits)

- Approved courses in Research Methodology: 12 credits
- Approved Research Practicum: 6 credits

Supporting Field (9-18 credits)

Nine credits are taken outside of the School of Education if the student's bachelor's degree is in an academic discipline or the equivalent. Eighteen credits are taken outside the School of Education if the degree is not in an academic discipline.

Electives

Electives are chosen to bring breadth and/or depth to the program of study. Because of the broad areas of specialty within the field of Special Education, these courses may be taken within the School or from across the University. Electives are taken as-needed to complete a minimum of 90 credits for the degree.

Dissertation (18 credits)

Vision Studies, PhD

Blindness/Vision Impairment/Orientation and Mobility, Doctor of Philosophy (PhD)

Total of 90 credits minimum (maximum of 30 credits form master's degree)

Major Field (DIL) Studies

30-36 credits with at least 18 credits at the 3000 level with a minimum of 15 credits at the University of Pittsburgh

- IL 3590 - RESEARCH SEMINAR IN SPECIAL EDUCATION

Research Methodology (12 credits minimum)

Approved courses in Research Methodology - 12 credits

Research Practicum Courses (6 credits)

Approved Research Practicum - 6 credits

Academic Area (9-18 credits)

Nine credits are taken outside of the School of Education if the student's bachelor's degree is in an academic discipline or the equivalent. Eighteen credits are taken outside the School of Education if the degree is not in an academic discipline. 9-18 credits
Electives (Credits variable)

Electives are chosen to bring breadth and/or depth to the program of study. Because of the broad areas of specialty within the field of Special Education, these courses may be taken within the School or from across the University.

Dissertation (18 credits)

Dissertation - 18 credits

Foreign Language Education with TESOL Certificate, MEd

Master's Degree Requirements

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Common Requirements

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.

Acceptance of Transfer Credits

For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.

A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Graduate Catalog:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

Grade Point Average/Academic Probation

All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be
recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

Statute of Limitations

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year to may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Plan of Studies

Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.

Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.

Basic Areas of Education Requirement

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.
Psychological Perspectives on Education

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE

Social and Cultural Perspectives on Education

- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION

Research Methods

- EDUC 2200 - DISCIPLINED INQUIRY *
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- EDUC 2202 - EDUCATIONAL/PSYCHOLOGICAL MEASUREMENT
- EDUC 2205 - FIELD METHODS
  *Enrollment limited to MAT students

Additional Requirements

Master's Comprehensive Examination

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or department to which the student has been admitted. Procedures and schedules of administration are available from the program or department. *The student must be enrolled to take the comprehensive examination.

*See also Comprehensive Examination under Regulations Pertaining to Master of Arts and Master of Science Degrees. The University-wide regulations on comprehensive examinations detailed there apply to all School of Education master's programs.


Some MA and MS degree programs within the School of Education are offered with a thesis requirement while others are offered with the option of completing either a thesis or a thesis equivalent. All MAT degree programs and some MEd programs require the completion of a research paper.
Master's Degree with Thesis

The master's degree with thesis is intended for graduate students who have pursued advanced graduate study in at least one field of education specialization and have demonstrated through the master's thesis the capability to plan and carry through a project of original research. The plan of studies should include at least 6 credits in thesis work.

Thesis Overview

The thesis overview is a written proposal for the thesis. The overview is presented to the master's committee, which consists of a minimum of three faculty members (at least one from another program or department) selected in consultation with the student by the research advisor and approved by the department. The student must submit a form for approval of the thesis committee. A student must be registered in the term during which the thesis overview meeting is scheduled. A unanimous vote of the master's committee is required for approval of the overview. The outcome of the overview meeting is submitted on the appropriate form along with a corrected copy of the overview to the Office of Admissions and Enrollment Services.

Approval of Research with Human Subjects

If the research proposed in the overview involves human subjects, the proposed research must be approved by the University Institutional Review Board (IRB) for the Protection of Human Subjects before it may be carried out. Information on materials that must be submitted and the procedures that must be followed for an IRB review are available in departmental offices and the Office of Admissions and Enrollment Services.

Advancement to Master's Candidacy

To be advanced to candidacy for the master's degree with thesis a student must:

- be admitted to full graduate status;
- have a minimum grade point average of 3.00 (transfer credits not considered);
- have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
- have passed the comprehensive examination;
- have an approved overview on file in the Office of Admissions and Enrollment Services; and
- if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.

Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.

Final Oral Examination

The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper
Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements

Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

Master of Education Degree with TESOL Certificate

This option permits qualified individuals for the MEd with a specialization in foreign language education to be considered upon application by the Department of Instruction and Learning and by the Department of Linguistics for admission to the University of Pittsburgh certificate program in the Teaching of English to Speakers of Other Languages (TESOL). If accepted, students combine course work for the MEd in foreign language education with required courses for the TESOL certificate. Students complete a minimum of 37 credits in this combined specialization. The University of Pittsburgh TESOL certificate is not to be confused with state certification for teaching in the public elementary or secondary schools. The degree is ideal for individuals seeking positions as English language teachers in other countries or in university English Language Institutes. Each applicant who is not a native speaker of English must: (1) achieve a score of 100 or higher on the internet-based TOEFL (Skill Requirements: Reading and Listening - High; Speaking and Writing - one skill must be at the level of Good) or 7.5 or higher on the IELTS (Skills Requirement: Speaking and Writing - combined minimum of 13) and (2) have good spoken English skills.

Required Course

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION

Social and Cultural Perspectives on Education

Choose 3.0 credits from the following courses:

- IL 2405 - INTRODUCTION TO ACTION RESEARCH METHODS
- IL 2256 - ISSUES IN FOREIGN LANGUAGE ED
- IL 2253 - PRIN/PRA FRGN LANG TESTNG ASSMNT

Foreign Language Education Elective

- LING 1000 - INTRODUCTION TO LINGUISTICS
- LING 2738 - LINGUISTIC STRUCTURES OF ENGLISH
- LING 2142 - THEORIES AND PRACTICES OF SECOND LANGUAGE TEACHING
- LING 2146 - SECOND LANGUAGE ACQUISITION
- LING 2143 - SEM LANG TCHNG MATLS DEVELOPMENT
- LING 2195 - PRACTICUM ESL TEACHING
- IL 2290 - RESEARCH SEMINR FOR MED STUDENTS

Applied Behavior Analysis, MEd

Program Studies-Applied Behavior Analysis
IL 2564 - APPLIED BEHAVIORAL ANALYSIS 1: FUNDAMENTALS 1
IL 2565 - APPLIED BEHAVIORAL ANALYSIS 2: FUNDAMENTALS 2
IL 2566 - APPLIED BEHAVIORAL ANALYSIS 3: APPLICATIONS IN DEVELOPMENTAL DISABILITIES
IL 2567 - APPLIED BEHAVIORAL ANALYSIS 4: EMOTIONAL BEHAVIORAL DISABILITIES OF CHILDREN AND ADOLESCENTS
IL 2568 - APPLIED BEHAVIORAL ANALYSIS 5: CURRENT DEVELOPMENTS IN APPLIED BEHAVIORAL ANALYSIS
IL 2578 - APPLIED BEHAVIORAL ANALYSIS 6: ETHICS

Program Studies-Approved Electives

Choose 9.0 credits from the following courses

- IL 2505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS
- IL 2506 - SOCIAL AND COMMUNICATIVE INTERVENTIONS: AUTISM
- IL 2509 - APPLD BHVR ANAL/POSTV BHVR SUPRT
- IL 2511 - CURR PRG DVLP-LOW INCDNC DISABS
- IL 2522 - ED STDNT EMOTIONAL DISTURBANCE
- IL 2529 - BRAILLE
- IL 2530 - INTRODUCTION TO THE EYE AND LOW VISION
- IL 2531 - EDUCATION OF CHILDREN WITH VI 1
- IL 2533 - ORIENTATION AND MOBILITY FOR THE TVI
- IL 2540 - FOUNDATIONS OF ORIENTATION AND MOBILITY
- IL 2569 - APPLIED BEHAVIORAL ANALYSIS PRACTICUM
- IL 2585 - TECHNOLOGY-BASED INTERVENTIONS: AUTISM

Psychological Perspective on Education

Choose 3.0 credits from the following courses.

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE
- PSYED 2127 - HUMAN LEARNING
- PSYED 2503 - DEVELOPMENT: CONCEPTION THROUGH EARLY CHILDHOOD
- PSYED 2504 - DVLP: MIDDLE CHLHD/ADOLESCENCE

Research Methods

Research Methods: Choose 3.0 credits from the following 2 courses

- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY

Social and Cultural Perspectives on Education

Choose 3.0 credits from the following courses

- ADMPS 2050 - RACE AND RACISM IN EDUCATION AND SOCIETY
- ADMPS 2133 - GENDER AND EDUCATION
- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2307 - POLITICS AND HISTORY OF HIGHER EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
- ADMPS 2344 - LEADERSHIP IN SERVICE LEARNING
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION
- HPA 2322 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2109 - GENDER IN EDUCATION

Research Seminar

- IL 2590 - RESEARCH SEMINAR IN SP ED

**Combined Accelerated Studies in Education (CASE), MEd**

**Requirements**

After completion of the junior and senior years of study in the undergraduate Combined Accelerated Studies in Education (CASE) program the student can apply for admission to the graduate CASE Program. The 40 credit program leads to an MEd degree, PreK-4 certification and PreK-8 special education certification.

- IL 2290 - RESEARCH SEMINAR FOR MED STUDENTS
- IL 2434 - MATH AND SCIENCE METHODS 2 (PRE K - GRADE 4)
- IL 2509 - APPLD BHVR ANAL/POSTV BHVR SUPRT
- IL 2512 - ASSMNT INSTRUC-HIGH INCIDNC DISAB
- IL 2513 - INSTRNL METH-HIGH INCIDNC DISABS
- IL 2522 - ED STDNT EMOTIONAL DISTURBANCE
- IL 2707 - FIELD SEMINAR IN EARLY CHILDHOOD EDUCATION
- IL 2751 - METHODS AND MANAGEMENT IN SP ED
- IL 2800 - STUDENT TEACHING-EARLY CHLDHD ED
- IL 2853 - STUDENT TEACHING - STUDENTS WITH HIGH INCIDENCE OF DISABILITIES
- IL 2858 - STUDENT TEACHING SEMINAR - SPECIAL EDUCATION TEACHER PREPARATION

**Early Childhood Education, MEd**
The program is intended for individuals who already have an Early Childhood Education Certificate or whose career paths do not require them to have a certificate. Individuals who complete the post-baccalaureate Early Childhood Education Certification program (Primary Plus) at the University of Pittsburgh may apply up to 18 credits from their certification studies towards the Master of Education program. Application to the M.Ed. program must be made within three years of completing the certification program. Course work in the Master of Education program is intended to enhance the continuing professional development of early childhood teachers beyond the skills and competencies acquired during certification study and to assist them in gaining greater self-determination through heightened awareness and understanding of their own teaching practice. Students complete a minimum 36-credit-hour program and must fulfill all curriculum and degree requirements for graduation.

Basic Areas of Education (12 credits)

Education and Human Development - 3 credits
Education and Society - 3 credits
Intro to Research Methodology - 3 credits
• IL 2290 - RESEARCH SEMINR FOR MED STUDENTS or
• IL 2690 - RESEARCH SEMINAR ONLINE

Methods Courses

• IL 2042 - LANGUAGE AND LITERATURE FOR THE YOUNG CHILD
• IL 2270 - INTEGRATED ART & MUSIC IN ELEMENTARY SCHOOL
• IL 2433 - MATH/SCIENCE INSTRUCTION FOR YOUNG LEARNERS 1 (PREK - GRADE 4)
• IL 2434 - MATH AND SCIENCE METHODS 2 (PRE K - GRADE 4)
• IL 2905 - TEACHING INFANTS, TODDLERS AND PRESCHOOLERS
• IL 2208 - READING/Writing METHODS 1: PRE K - GRADE 1
• IL 2209 - READING WRITING METHODS 2: GRADE 2-4
• IL 2268 - SOCIAL STUDIES METHODS PRE-K - 4
• IL 2047 - INTEGRATED CURRICULUM PRE-K-4
• IL 2563 - SEM: INCLUSION EARLY CHILDHOOD
• Other Elective Approved by Advisor - 3 credits

Major Field Studies

• IL 2041 - INTRO TO EARLY CHILDHOOD ED
• IL 2906 - COMMUNITY RESOURCES SEMINAR: YOUNG CHILDREN AND FAMILIES
• Advanced Course in Family Studies or Approved Elective - 3 credits
• Practicum or Approved Elective - 3 credits

Special Ed

One of the following:

• IL 2500 - FOUNDATIONS OF SPECIAL EDUC
• IL 2501 - STUDENT W/DISAB IN ELEM CLSSRM
• IL 2523 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETNGS IN ELEM CLSSRMS
• IL 2505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS

Early Intervention for Children with Disabilities Focus on Early Intervention, MEd
The Early Intervention program is an academic Master's program that prepares individuals to work with young children with disabilities (ages birth to 5 years) and their families. A hands-on, carefully supervised approach is used to assist students in developing competence in assessing young children with a variety of disabilities and planning, implementing, and evaluating appropriate educational programs for them. Students are taught to work in partnership with families and to collaborate with professionals from other disciplines. Consideration is given to a wide range of service delivery models including home, center, school, and hospital-based programs. Special emphasis is placed on preparing students to address the needs of young children with disabilities in natural, community settings that are designed for the inclusion of all children through direct and consultative service delivery.

**Master's Degree Requirements**

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

**Common Requirements**

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.

**Acceptance of Transfer Credits**

For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.

A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Graduate Catalog:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

**Grade Point Average/Academic Probation**

All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.
Statute of Limitations

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Plan of Studies

Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.

Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.

Basic Areas of Education Requirement

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.

Psychological Perspectives on Education

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
Social and Cultural Perspectives on Education

EDUC 2100 - EDUCATION AND SOCIETY
EDUC 2102 - HISTORY OF EDUCATION
EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
EDUC 2105 - SOCIOLOGY OF EDUCATION
EDUC 2106 - EDUCATION AND CULTURE
EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
EDUC 2109 - GENDER IN EDUCATION
EDUC 2110 - GENDER AND EDUCATION
EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION

Research Methods

EDUC 2200 - DISCIPLINED INQUIRY *
EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
EDUC 2202 - EDUCATIONAL/PSYCHOLOGICAL MEASUREMENT
EDUC 2205 - FIELD METHODS
*Enrollment limited to MAT students

Additional Requirements

Master's Comprehensive Examination

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or department to which the student has been admitted. Procedures and schedules of administration are available from the program or department. *The student must be enrolled to take the comprehensive examination.

*See also Comprehensive Examination under Regulations Pertaining to Master of Arts and Master of Science Degrees. The University-wide regulations on comprehensive examinations detailed there apply to all School of Education master's programs.


Some MA and MS degree programs within the School of Education are offered with a thesis requirement while others are offered with the option of completing either a thesis or a thesis equivalent. All MAT degree programs and some MEd programs require the completion of a research paper.

Master's Degree with Thesis

The master's degree with thesis is intended for graduate students who have pursued advanced graduate study in at least one field of education specialization and have demonstrated through the master's thesis the capability to plan and carry through a project of original research. The plan of studies should include at least 6 credits in thesis work.
Thesis Overview

The thesis overview is a written proposal for the thesis. The overview is presented to the master's committee, which consists of a minimum of three faculty members (at least one from another program or department) selected in consultation with the student by the research advisor and approved by the department. The student must submit a form for approval of the thesis committee. A student must be registered in the term during which the thesis overview meeting is scheduled. A unanimous vote of the master's committee is required for approval of the overview. The outcome of the overview meeting is submitted on the appropriate form along with a corrected copy of the overview to the Office of Admissions and Enrollment Services.

Approval of Research with Human Subjects

If the research proposed in the overview involves human subjects, the proposed research must be approved by the University Institutional Review Board (IRB) for the Protection of Human Subjects before it may be carried out. Information on materials that must be submitted and the procedures that must be followed for an IRB review are available in departmental offices and the Office of Admissions and Enrollment Services.

Advancement to Master's Candidacy

To be advanced to candidacy for the master's degree with thesis a student must:

- be admitted to full graduate status;
- have a minimum grade point average of 3.00 (transfer credits not considered);
- have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
- have passed the comprehensive examination;
- have an approved overview on file in the Office of Admissions and Enrollment Services; and
- if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.

Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.

Final Oral Examination

The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper

Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements
Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

**Master of Education Degree - Focus on Early Intervention**

A hands-on, carefully supervised approach is used to assist students in developing competence in assessing young children with a variety of disabilities and planning, implementing, and evaluating educational programs for them. The specialization emphasizes the development of collaborative partnerships with families and with other professionals in the delivery of services. Special consideration is given to preparing students to address the needs of young children with disabilities in community settings that are designed for the inclusion of all children. Course work and practicum experiences are based on evidenced-based practices. Students complete a minimum of 37 credit hours beyond six hours of prerequisite course work.

**Intro to Research Methodology**

Choose 3.0 credits from the following courses:

- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY
- IL 2563 - SEM: INCLUSION EARLY CHILDHOOD
- IL 2561 - PROGRAMMING IN EARLY INTERVENTION
- IL 2562 - ASSESSMENT YOUNG CHILDREN DISABILITY
- IL 2582 - WORKING WITH FAMILIES
- IL 2505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS

**Practicum**

Choose 6.0 credits from the following courses. You must take one of the courses twice.

- IL 2850 - PRACTICUM - PRESCHOOL
- IL 2852 - PRACTICUM - INFANTS & TODDLERS

**Seminar**

Choose 2.0 credits from the following courses.

- IL 2594 - INTERDISCIPLINARY LEADERSHIP SEMINAR DEVELOPMENTAL DISABILITY 1
- IL 2906 - COMMUNITY RESOURCES SEMINAR: YOUNG CHILDREN AND FAMILIES
- IL 2519 - ORAL MOTOR AND FEEDING STRATEGIES: YOUNG CHILDREN WITH DISABILITIES
- IL 2518 - POSITIONING, HANDLING AND MOBILITY: YOUNG CHILDREN WITH DISABILITIES
- IL 2507 - EARLY INTERVENTION CONSULTATION
- IL 3509 - ADV SEMINAR: EARLY INTERVENTION

**Approved Electives**

Approved Electives - 6.0 credits

**Prerequisites**
It is suggested that the courses below are taken as prerequisites, although they may be taken concurrently early in the student's program.

Foundations of Special Education - 3 credits
Child Development - 3 credits

**Elementary Education, MEd**

This is an online program. For more information about our online programs see Pitt Online.

**What are the goals of the MEd program?**

- To enable teachers to enhance both their understanding and ability to meet the needs of the diverse learners in their classrooms.
- To enable teachers to advance their understanding of one or more content areas.
- To enable teachers to broaden their understanding of educational research, educational theories as they apply to practice, action research practices, and educational policy.

**What are the MEd program options in Elementary Education?**

There is one 36-credit MEd option, however, those students who received their teaching certificate from the University of Pittsburgh will be admitted to the program with advanced standing. These students will need to take only 18 additional credits and will use 18 credits from their graduate certification program to complete the 36-credit requirement.

Similarly, if a student completed a graduate education program at another university, he/she will be granted up to 12 advanced credits. These courses will be transferred into the 36-credit MEd program and an additional 24 credits will be completed at the University of Pittsburgh.

**Who is eligible for each of these options?**

- Former certification candidates who completed their coursework at the University of Pittsburgh
- People who completed a certification in an undergraduate program
- People who completed a graduate-level certification program at a university other than the University of Pittsburgh
- International students who are not eligible for a teacher certification program but would like to earn a masters degree in elementary education

**How will I design my program?**

If you meet program requirements and are admitted into the MEd program, you will receive a letter offering you admission with the name of your advisor. Once you accept the offer of admission, contact your advisor to begin planning your program. Registration is done online so the curricula for the programs found in this website help you determine which courses you can choose to take.

**What other requirements will there be in addition to the courses?**

- During the last term of your program, contact your advisor to request a take-home comprehensive exam. You are to take only three hours to complete it and must return it within one week after receiving it.
- Within the first two weeks of the term in which you will be graduating, you must contact the Admissions and Enrollment Center (412-648-2230) and request that an application for graduation be sent to you or you can stop in (5300 Posvar) and pick up the necessary paperwork.

**Master's Degree Requirements**
The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Common Requirements

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.

Acceptance of Transfer Credits

For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.

A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Graduate Catalog:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a master degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

Grade Point Average/Academic Probation

All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

Statute of Limitations

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.
Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year to may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Plan of Studies

Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.

Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.

Basic Areas of Education Requirement

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.

Psychological Perspectives on Education

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE

Social and Cultural Perspectives on Education

- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
Research Methods

- EDUC 2200 - DISCIPLINED INQUIRY *
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- EDUC 2202 - EDUCATIONAL/PSYCHOLOGICAL MEASUREMENT
- EDUC 2205 - FIELD METHODS

*Enrollment limited to MAT students

Additional Requirements

Master's Comprehensive Examination

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or department to which the student has been admitted. Procedures and schedules of administration are available from the program or department. *The student must be enrolled to take the comprehensive examination.

*See also Comprehensive Examination under Regulations Pertaining to Master of Arts and Master of Science Degrees. The University-wide regulations on comprehensive examinations detailed there apply to all School of Education master's programs.


Some MA and MS degree programs within the School of Education are offered with a thesis requirement while others are offered with the option of completing either a thesis or a thesis equivalent. All MAT degree programs and some MEd programs require the completion of a research paper.

Master's Degree with Thesis

The master's degree with thesis is intended for graduate students who have pursued advanced graduate study in at least one field of education specialization and have demonstrated through the master's thesis the capability to plan and carry through a project of original research. The plan of studies should include at least 6 credits in thesis work.

Thesis Overview

The thesis overview is a written proposal for the thesis. The overview is presented to the master's committee, which consists of a minimum of three faculty members (at least one from another program or department) selected in consultation with the student by the research advisor and approved by the department. The student must submit a form for approval of the thesis committee. A student must be registered in the term during which the thesis overview meeting is scheduled. A unanimous vote of the master's committee is required for approval of the overview. The outcome of the overview meeting is submitted on the appropriate form along with a corrected copy of the overview to the Office of Admissions and Enrollment Services.
Approval of Research with Human Subjects

If the research proposed in the overview involves human subjects, the proposed research must be approved by the University Institutional Review Board (IRB) for the Protection of Human Subjects before it may be carried out. Information on materials that must be submitted and the procedures that must be followed for an IRB review are available in departmental offices and the Office of Admissions and Enrollment Services.

Advancement to Master's Candidacy

To be advanced to candidacy for the master's degree with thesis a student must:

- be admitted to full graduate status;
- have a minimum grade point average of 3.00 (transfer credits not considered);
- have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
- have passed the comprehensive examination;
- have an approved overview on file in the Office of Admissions and Enrollment Services; and
- if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.

Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.

Final Oral Examination

The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper

Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements

Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

Master of Education Degree
The MEd is a 36-credit program specializing in elementary education. Applicants are required to have a 3.00 undergraduate GPA and to be certified in elementary education.

**English and Communications Education, MAT**

The University of Pittsburgh, School of Education, offers two post-baccalaureate programs for Secondary English and Communications teacher certification (grades 7-12), the Master of Arts in Teaching (MAT) Program and Instructional I Teaching Certificate. MAT certification is available in Comprehensive English and in three areas of Communication - Theater Arts Concentration, Film Media Concentration, and Speech Concentration. Certification in more than one English or Communication area is also available. Details of the MAT program are outlined below:

- requires Teaching Interns to take and pass the Content Knowledge test (Praxis II) during the first semester of their program in order to obtain their Intern Certificate
- satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the national PRAXIS II Exam, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and in the internship)
- is completed in three terms (fall, spring, summer 1 session) beginning in late August of the admission year and concluding in mid-June of the following year
- consists of 36 credits of graduate course work combined with a maximum 4.5 day per week internship in a local school district from September through June

*Discover more about our programs through the words of current students and alumni in a Teacher Certification video. In addition, find out more about the new Urban Scholars via videos that follow four students as they go through a full year of the program, which prepares preservice teachers to be successful in urban schools by pairing them with skilled mentors who help build positive relationships with students.*

Interested in finding out more about our teacher education programs? Admissions representatives can answer questions you have at an upcoming Teacher Education Information Session.

**MAT Program**

- IL 2230 - TEACHING AND LEARNING IN SECONDARY ENGLISH 1
- IL 2245 - TEACHING & LEARNING IN SECONDARY ENGLISH 2
- IL 2725 - PRACTICUM IN SECONDARY ENGLISH EDUCATION
- IL 2502 - STUDNT W/DISAB IN SECNDRY CLSSRM
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
- EDUC 2200 - DISCIPLINED INQUIRY
- IL 2820 - TEACHING AND LEARNING IN SECONDARY ENGLISH 3
- IL 2520 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETTINGS IN SEC CLSSRM
- IL 2881 - INTERNSHIP-ENGLISH OR COM EDUC
- IL 2824 - STUDENT TEACHING SEMINAR IN ENGLISH OR COMMUNICATION EDUCATION
- IL 2990 - RESEARCH SEMINAR FOR MAT INTERNS
- PSYED 2265 - ATTENTIONAL TEACHING PRACTICES 1
- PSYED 2266 - ATTENTIONAL TEACHING PRACTICES 2

**English and Communications Education, MEd**

Students complete a minimum of 36 credits of specialized study in English education. All students must pass a comprehensive examination to complete the degree.

Students who have completed the English Education certification program at the University of Pittsburgh may transfer up to 18 graduate-level course credits from their certification coursework to the MEd program. Students should consult their advisors for the exact number of credits they can transfer.
MEd English and Communications Education Core Curriculum

24 credits from the following 6 courses:

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2100 - EDUCATION AND SOCIETY
- IL 2235 - THEORY AND PRACTICE IN TEACHING LANGUAGE, GRAMMAR AND USAGE
- IL 2239 - THEORY AND PRACTICE IN TEACHING NEW MEDIA AND LITERACIES
- IL 2240 - THEORY AND PRACTICE: ASSESSMENT IN ENGLISH EDUCATION
- IL 2243 - THEORY & PRAC IN TCHNG WRITING
- IL 2246 - THRY & PRAC: MULTI-CULTURAL LIT
- IL 2290 - RESEARCH SEMINR FOR MED STUDENTS

Research Methodology

Choose 3.0 credits from the following 2 courses

- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- IL 2405 - INTRODUCTION TO ACTION RESEARCH METHODS

Electives

Choose 9.0 credits from the following 6 courses

The elective courses may be taken in the School of Education or from other schools/departments, such as English Language or Linguistics, as long as the courses support the student's professional growth in English Education and are approved by the student's advisor. Pitt online courses that will count as electives are: IL 2201, IL 2257, ADMPS 2117.

- ADMPS 2117 - DIFFERENTIATED INSTRUCTIONAL PRACTICES  
  (online course)
- IL 2201 - SOCIOCULTURAL PERSPECTIVES ON LITERACY LEARNING  
  (online course)
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS  
  (online course)
- IL 2516 - INCLUSIVE SETTING CLASSROOM MANAGEMENT STRATEGIES  
- IL 2523 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETNGS IN ELEM CLSSRMS
- LSAP 3595 - SPECIAL TOPICS

Foreign Language Education, MAT

Foreign Language Education - Master of Education (MAT)

The University of Pittsburgh, School of Education, offers a post-baccalaureate program for Foreign Language teacher certification (grades K-12), the Master of Arts in Teaching (MAT) Program. Certification Studies are available in French, German, Italian, Spanish, Chinese, Japanese, or Latin. Native speakers of the language of certification are not exempt from prerequisite course work in the culture, civilization literature, and structure of their language. Applicants who are non-native speakers of the language of certification are also required to achieve at least an Advanced-Low rating on an oral proficiency interview by an individual certified by the American Council on the Teaching of Foreign Languages. Details of the MAT program are outlined below:
• requires Teaching Interns to pass the Written Proficiency Test (WPT) in the language of certification during the first semester of their program in order to attain the Intern Certificate. The WPT, in combination with the OPI (part of the admissions process), fulfills the Praxis II requirements for the state—this is the preferred way of satisfying the Praxis II requirements. Please note that this applies to all foreign language candidates with the exception of those students pursuing certification in Latin—because no OPI or WPT in Latin is available, students pursuing this option must satisfy Praxis II requirements in taking and passing the standard Content Knowledge test in Latin.
• satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the Writing Proficiency Test (WPT) and national PRAXIS II Exam of Fundamental Content Knowledge, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and student teaching)
• is completed in three terms (fall, spring, summer 1 session) beginning in late August of the admission year and concluding in mid-June of the following year
• consists of 36 credits of graduate course work combined with a maximum 4.5 day per week internship in a local school district from September through June

Discover more about our programs through the words of current students and alumni in a Teacher Certification video. In addition, find out more about the new Urban Scholars via videos that follow four students as they go through a full year of the program, which prepares preservice teachers to be successful in urban schools by pairing them with skilled mentors who help build positive relationships with students.

Interested in finding out more about our teacher education programs? Admissions representatives can answer questions you have at an upcoming Teacher Education Information Session.

Master's Degree Requirements

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Common Requirements

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.

Acceptance of Transfer Credits

For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.

A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Graduate Catalog:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load.

Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

Grade Point Average/Academic Probation
All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

Statute of Limitations

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year to may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Plan of Studies

Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.

Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.
Basic Areas of Education Requirement

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.

Psychological Perspectives on Education

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE

Social and Cultural Perspectives on Education

- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION

Research Methods

- EDUC 2200 - DISCIPLINED INQUIRY *
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- EDUC 2202 - EDUCATIONAL/PSYCHOLOGICAL MEASUREMENT
- EDUC 2205 - FIELD METHODS

*Enrollment limited to MAT students

Additional Requirements

Master's Comprehensive Examination

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or department to which the student has been admitted. Procedures and schedules of administration are available from the program or department. *The student must be enrolled to take the comprehensive examination.

Some MA and MS degree programs within the School of Education are offered with a thesis requirement while others are offered with the option of completing either a thesis or a thesis equivalent. All MAT degree programs and some MEd programs require the completion of a research paper.

Master's Degree with Thesis

The master's degree with thesis is intended for graduate students who have pursued advanced graduate study in at least one field of education specialization and have demonstrated through the master's thesis the capability to plan and carry through a project of original research. The plan of studies should include at least 6 credits in thesis work.

Thesis Overview

The thesis overview is a written proposal for the thesis. The overview is presented to the master's committee, which consists of a minimum of three faculty members (at least one from another program or department) selected in consultation with the student by the research advisor and approved by the department. The student must submit a form for approval of the thesis committee. A student must be registered in the term during which the thesis overview meeting is scheduled. A unanimous vote of the master's committee is required for approval of the overview. The outcome of the overview meeting is submitted on the appropriate form along with a corrected copy of the overview to the Office of Admissions and Enrollment Services.

Approval of Research with Human Subjects

If the research proposed in the overview involves human subjects, the proposed research must be approved by the University Institutional Review Board (IRB) for the Protection of Human Subjects before it may be carried out. Information on materials that must be submitted and the procedures that must be followed for an IRB review are available in departmental offices and the Office of Admissions and Enrollment Services.

Advancement to Master's Candidacy

To be advanced to candidacy for the master's degree with thesis a student must:

- be admitted to full graduate status;
- have a minimum grade point average of 3.00 (transfer credits not considered);
- have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
- have passed the comprehensive examination;
- have an approved overview on file in the Office of Admissions and Enrollment Services; and
- if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.

Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.

Final Oral Examination
The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper

Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements

Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

Master of Arts in Teaching Degree

The Master of Arts in Teaching degree is available for qualified liberal arts graduates who want to combine initial teacher certification in a particular foreign language with advanced study for a master's degree. Applicants must have completed, or must be able to complete, prerequisite course work before beginning the MAT. Native speakers of the language of certification are not exempt from prerequisite course work in the culture, civilization, literature, and structure of their language. Students complete a minimum of 36 credits. Applicants are also required to submit results of an Oral Proficiency Interview by an individual certified by the American Council on the Teaching of Foreign Languages. A rating of Advanced Low or higher on the Oral Proficiency Interview is expected.

- IL 2252 - TEACHING AND LEARNING IN K-12 FOREIGN LANGUAGE 1
- IL 2258 - TEACHING & LEARNING IN SECONDARY FOREIGN LANGUAGE 2
- IL 2892 - PRACTICUM IN K-12 FOREIGN LANGUAGE
- IL 2502 - STUDNT W/DISAB IN SECNDRY CLSSRM
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
- EDUC 2200 - DISCIPLINED INQUIRY
- IL 2520 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETTINGS IN SEC CLSSRM
- IL 2990 - RESEARCH SEMINAR FOR MAT INTERNS
- IL 2882 - INTERNSHIP - FOREIGN LANGUAGE
- PSYED 2265 - ATTENTIONAL TEACHING PRACTICES 1
- PSYED 2266 - ATTENTIONAL TEACHING PRACTICES 2
- IL 2826 - STUDENT TECHING SEM-FOREIGN LANG
- IL 2254 - TEACHING & LEARNING IN K-12 FOREIGN LANGUAGE 3

Foreign Language Education, MEd

Master of Education (MEd) - Foreign Language Education
The MEd with specialization in foreign language education is a professional degree for individuals wishing to pursue advanced study in the field of teaching and learning foreign languages combined with trends, issues, a practice-based approach to new, current methodologies, and research in education in general. This option is tailored to the needs of practicing or returning foreign language teachers who wish to learn about recent developments in the field of foreign language education. This degree is also suitable for international students who wish to learn more about foreign language instruction (e.g., English as a foreign language) in their home countries. Some course work in a particular foreign language at the graduate level is also possible within this option. This option does not provide courses or clinical experiences for initial teacher certification. The degree consists of a minimum of 36 credit hours and may be completed on a part-time basis. Six credits earned while pursuing the MEd from an approved, graduate study-abroad program may be counted toward this degree. International students are required to provide proof of English language proficiency at the time of application by a score of 80 or higher on the TOEFL IBT test, a minimum score of 213 on the CBT, a Band 6.5 on the International English Language Testing System (IELTS), or by having earned a degree in an accredited United States university. In the last term of the program, it is required that all MEd candidates sign up to take a written comprehensive exam scheduled in October and March of each year.

**MEd with Specialization in TESOL**

The MEd can also be done in conjunction with a TESOL certificate (Teaching English to Speakers of Other Languages). Students pursuing this opportunity, which is completed in collaboration with Pitt's Department of Linguistics, have the option of choosing from two concentrations within the TESOL certificate: higher education and K-12. The higher education option is ideal for students who plan to work primarily with adult students in the United States and abroad. The K-12 concentration is available only to those students who already hold a PA Instructional I or II certificate (this option is also open to students who have earned a teaching certificate outside of PA, although the application process may vary). Completion of the K-12 concentration allows students to earn an endorsement from the Pennsylvania Department of Education (PDE) as an English as a Second Language (ESL) Program Specialist. Please note that international students applying to the MEd with specialization in TESOL are only eligible to complete the higher education concentration, and must provide evidence of having achieved a score of 80 or higher on the TOEFL IBT test, a minimum score of 213 on the CBT, or a Band 6.5 on the International English Language Testing System (IELTS) for admission consideration.

Unlike the MEd in Foreign Language Education, the MEd with Specialization in TESOL does not accept an earned degree in an accredited United States university as evidence of English language proficiency.

**Master's Degree Requirements**

*The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.*

**Common Requirements**

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.

**Acceptance of Transfer Credits**

*For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.*

A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Graduate Catalog:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.
Grade Point Average/Academic Probation

All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

Statute of Limitations

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year to may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Plan of Studies

Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.
Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.

**Basic Areas of Education Requirement**

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.

**Psychological Perspectives on Education**

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE

**Social and Cultural Perspectives on Education**

- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION

**Research Methods**

- EDUC 2200 - DISCIPLINED INQUIRY *
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- EDUC 2202 - EDUCATIONAL/PSYCHOLOGICAL MEASUREMENT
- EDUC 2205 - FIELD METHODS

*Enrollment limited to MAT students

**Additional Requirements**

**Master's Comprehensive Examination**

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or
To be advanced to candidacy for the master's degree with thesis a student must:

- be admitted to full graduate status;
- have a minimum grade point average of 3.00 (transfer credits not considered);
- have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
- have passed the comprehensive examination;
- have an approved overview on file in the Office of Admissions and Enrollment Services; and
- if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.

Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.
Final Oral Examination

The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper

Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements

Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

Master of Education Degree

The MEd degree is a professional degree for individuals wishing to pursue advanced study in the field of teaching and learning foreign languages combined with trends, issues, and research in education in general. This option is tailored to the needs of foreign language teachers who wish to learn about recent developments in the field of foreign language education. This degree is also suitable for international students who wish to learn more about foreign language instruction (e.g., English as a foreign language). Some course work in a particular foreign language at the graduate level is also possible within this option. This option does not provide courses or clinical experiences for initial teacher certification. The degree consists of a minimum of 36 credit hours and may be completed on a part-time basis. International students are required to provide an assessment of English language proficiency at the time of application. A minimum score of 550 on the paper based TOEFL or a score of 80 on the internet-based TOEFL is required for admission. The International English Language Testing System (IELTS) may also be submitted as evidence of English language proficiency. A minimum score of 6.5 is necessary on IELTS for admission.

Curriculum: Students starting Fall 2016 (2171) and later

A Comprehensive Exam must be taken in the Fall or Spring of the second year of study.

- IL 2255 - TECHNQ/PROC DR FOREIGN LANG TCH
- ADMPS 2106 - INTERNATIONAL AND GLOBAL EDUCATION
- IL 2256 - ISSUES IN FOREIGN LANGUAGE ED
- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- IL 2722 - PRACTICUM IN FOREIGN LANGUAGE
- IL 2405 - INTRODUCTION TO ACTION RESEARCH METHODS
- IL 2253 - PRIN/PRA FRGN LANG TESTNG ASSMNT
- IL 2702 - ADVANCED PRACTICUM IN FOREIGN LANGUAGE
- IL 2290 - RESEARCH SEMINR FOR MED STUDENTS
- IL 2251 - INTRODUCTION TO FOREIGN LANGUAGE EDUCATION

Electives
Choose 6.0 credits from the following courses

- IL 2250 - TECHNOLOGY IN FOREIGN LANGUAGE EDUCATION
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
- IL 2711 - SPECIAL TOPICS - FOREIGN LANGUAGE EDUCATION

**General Special Education, MEd**

The MEd in General Special Education requires a minimum of 36 credits meeting School of Education requirements for Basic Areas of Education courses, a three-credit research seminar, and elective courses in Special Education. Students will work with a faculty advisor to develop a curricular plan that combines work in Special Education and related studies in education. Students must pass a comprehensive exam prior to receiving the M.Ed. degree.

**Special Education Program Studies**

The 12 credits in Special Education may be chosen from within or across the following specialty areas of Special Education: Applied Behavior Analysis, Students with Visual Impairments, Early Intervention for Children with Disabilities, or Supervisor of Special Education Certificate

**Electives**

Choose 12 credits of elective courses from special education, other program areas within the Department of Instruction and Learning, other departments within the School of Education, or other schools at the University of Pittsburgh offering coursework relevant to the student's specialty area.

**Research Methods**

Choose 3.0 credits from the following courses:

- ADMPS 2356 - FIELD METHODS
- EDUC 2200 - DISCIPLINED INQUIRY
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- EDUC 2202 - EDUCATIONAL/PSYCHOLOGICAL MEASUREMENT
- EDUC 2205 - FIELD METHODS
- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY
- PSYED 2072 - EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT
- PSYED 2519 - QUALITATIVE METHODS: PARTICIPANT OBSERVATION

**Research Seminar**

- IL 2590 - RESEARCH SEMINAR IN SP ED

**Psychological Perspectives on Education**

Choose 3.0 credits from the following 7 courses:

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE
Social and Cultural Perspectives on Education

Choose 3.0 credits from the following courses:

- ADMPS 2050 - RACE AND RACISM IN EDUCATION AND SOCIETY
- ADMPS 2133 - GENDER AND EDUCATION
- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2307 - POLITICS AND HISTORY OF HIGHER EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
- ADMPS 2344 - LEADERSHIP IN SERVICE LEARNING
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION
- HPA 2322 - EVIDENCE BASED HEALTH PROGRAM PLANNING

Master of Education (MEd) with Special Education 7-12 Certificate

Requirements

- IL 2575 - TRANSITION PROCESSES AND SPECIAL EDUCATION PROCEDURES
- IL 2509 - APPLD BHVR ANAL/POSTV BHVR SUPRT
- IL 2513 - INSTRNL METH-HIGH INCIDNC DISAB
- IL 2511 - CURR PRG DVLP-LOW INCNDNC DISAB
- IL 2861 - PRACTICUM IN SECONDARY SPECIAL EDUCATION - SPECIAL EDUCATION TEACHER PREPARATION
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- IL 2552 - STUDENT TEACHING-SPECIAL EDUCATION IN SECONDARY SCHOOLS
- IL 2512 - ASSMNT INSTRUC-HIGH INCDCN DISAB
- IL 2522 - ED STDNT EMOTIONAL DISTURBANCE
- IL 2590 - RESEARCH SEMINAR IN SP ED
Specialization Course Options

Choose 6.0 credits from the following courses

Additional special education, pre-approved graduate level courses may be taken as offered. Pre-approved content area course in Math, Science, Social Studies, or English Education.

- IL 2220 - READING IN CONTENT AREAS
- IL 2505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS
- IL 2506 - SOCIAL AND COMMUNICATIVE INTERVENTIONS: AUTISM
- IL 2525 - TECHNOLOGY FOR CHILDREN WITH VI
- IL 2529 - BRAILLE
- IL 2530 - INTRODUCTION TO THE EYE AND LOW VISION
- IL 2531 - EDUCATION OF CHILDREN WITH VI 1
- IL 2532 - EARLY INTERVENTION FOR CHILDREN WITH VI
- IL 2548 - SPECIAL TOPICS SPECIAL EDUCATION
- IL 2707 - FIELD SEMINAR IN EARLY CHILDHOOD EDUCATION
- IL 3542 - WEB CURRNT ISSUES & TRENDS SP ED

Master of Education (MEd) with Special Education Pre-K - 8 Teacher Certificate

The Special Education Teacher Preparation PreK-8 (SETP PreK-8) specialization is a post baccalaureate program with two paths for completion. One option combines special education teacher certification with a Master of Education (MEd) degree. The other option is for special education teacher certification only.

Students pursuing a Master of Education degree (MEd) specializing in Special Education PreK-8 are required to complete a minimum of 39 credits beyond the prerequisite course work. MEd students will develop advanced knowledge in the fields of educational research, learning theory, and child development to enhance their teaching practice.

Most MEd candidates complete the program in twelve months of full-time study. Each year a new cohort of students begins the program together starting in the summer and finishing in early June of the following summer. With the exception of the first summer term, special education courses are offered in the evening. A few of the MEd required courses are also available in an online format.

During the fall term students are required to spend one day per week in each school to which they are assigned for student teaching in preparation for student teaching in the spring. Students complete two different full-time student teaching experiences in the spring, each of eight weeks duration. During the student teaching experiences, teacher candidates are closely supervised by both a university supervisor and an experienced mentor teacher. The School of Education Office of Placement Services and Clinical Practices will arrange field placements for students.

The MEd program requires students to successfully complete the Special Education Comprehensive Exam. The Comprehensive Exam is a proctored, three-hour written exam based on the student's area of concentration and is completed near the end of their MEd degree program.

Admission follows successful completion of an initial teacher certification program (Elementary, PreK-4, Grades 4-8, Reading Specialist), an undergraduate degree, and selected prerequisite courses. Students enter the Special Education Pre-K-8 specialization on a full-time basis.

Requirements

- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- IL 2590 - RESEARCH SEMINAR IN SP ED
- IL 2509 - APPLD BHVR ANAL/POSTV BHVR SUPRT
- IL 2511 - CURR PRG DVLP-LOW INCDNC DISAB
- IL 2512 - ASSMNT INSTRUC-HIGH INCDNC DISAB
Specialization Course

Choose 3.0 credits from the following courses

Students may also choose a content area course in Math, Science, Social Studies, or English Education as approved by their advisor.

- IL 2505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS
- IL 2506 - SOCIAL AND COMMUNICATIVE INTERVENTIONS: AUTISM
- IL 2525 - TECHNOLOGY FOR CHILDREN WITH VI
- IL 2562 - ASESMNT YOUNG CHLDRN DISABLTY
- IL 2707 - FIELD SEMINAR IN EARLY CHILDHOOD EDUCATION

BAE Course

Choose 3.0 credits from the following courses

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE

Master of Special Education with Academic Instruction Certificate (MOSAIC)

MOSAIC Curriculum

- IL 2575 - TRANSITION PROCESSES AND SPECIAL EDUCATION PROCEDURES
- IL 2509 - APLLD BHVR ANAL/POSTV BHVR SUPRT
- IL 2513 - INSTRNL METH-HIGH INCIDNC DISABS
- IL 2511 - CURR PRG DVLP-LOW INCIDNC DISABS

Teaching and Learning in Secondary Content Areas I

- IL 2230 - TEACHING AND LEARNING IN SECONDARY ENGLISH 1
- IL 2252 - TEACHING AND LEARNING IN K-12 FOREIGN LANGUAGE 1
Mathematics Education, MAT

The University of Pittsburgh, School of Education, offers a post-baccalaureate program for Mathematics teacher certification (grades 7-12), the Master of Arts in Teaching Program (MAT). Details of the MAT are outlined below:

- requires Teaching Interns to take and pass the Content Knowledge test (Praxis II) during the first semester of their program in order to obtain their Intern Certificate
- satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the national PRAXIS II Exam, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and in the internship)
- is completed in three terms (fall, spring, summer 1 session) beginning in late August of the admission year and concluding in mid-June of the following year
- consists of 36 credits of graduate course work combined with a maximum 4.5 day per week internship in a local school district from September through June

Required Courses
Mathematics Education, MEd

Students complete a minimum of 36 credits.

Math Education Core Curriculum

18 Credits

- IL 2474 - PROPORTIONAL REASONING IN MIDDLE SCHOOL MATHEMATICS
- IL 2484 - MATH PROBLEM SOLVING K-12
- IL 2405 - INTRODUCTION TO ACTION RESEARCH METHODS
- IL 2290 - RESEARCH SEMINR FOR MED STUDENTS
- IL 2451 - SPECIAL TOPICS: MATHEMATICS

(Assessment and Evaluation)

(Reasoning and Proving)

Electives

Choose 9 credits of elective courses from mathematics, mathematics education, statistics, and computer science, and from other programs in the School of Education chosen to support the program of studies.

Psychological Perspectives on Education

Choose 3.0 credits from the following 7 courses.

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE
- PSYED 2127 - HUMAN LEARNING
- PSYED 2504 - DVLP: MIDDLE CHILHD/ADOLESCENCE

Research Methods

Choose 3.0 credits from the following 5 courses.
Social and Cultural Perspectives on Education

Choose 3.0 credits from the following courses.

- ADMPS 2050 - RACE AND RACISM IN EDUCATION AND SOCIETY
- ADMPS 2133 - GENDER AND EDUCATION
- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION

Reading Education, MEd

At the master's degree level, students may emphasize study in the specialization of reading education.

Two master's degree options are offered in the reading education specialization. One is combined with Pennsylvania Reading Specialist Certification—the MEd plus Reading Specialist Certification, and this "general" Master's degree that does not include the Reading Specialist certification. This Master's degree may be selected by those who wish to have more choice in the development of their program. This program may be more appropriate for students whose native language is not English or who come from another country.

Master's Degree Requirements

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Common Requirements

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.
Acceptance of Transfer Credits

For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.

A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Graduate Catalog:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

Grade Point Average/Academic Probation

All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

Statute of Limitations

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year to may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

Academic Integrity Policy
Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Plan of Studies

Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.

Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.

Basic Areas of Education Requirement

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.

Psychological Perspectives on Education

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE

Social and Cultural Perspectives on Education

- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION

Research Methods
Additional Requirements

Master's Comprehensive Examination

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or department to which the student has been admitted. Procedures and schedules of administration are available from the program or department. *The student must be enrolled to take the comprehensive examination.

*See also Comprehensive Examination under Regulations Pertaining to Master of Arts and Master of Science Degrees. The University-wide regulations on comprehensive examinations detailed there apply to all School of Education master's programs.


Some MA and MS degree programs within the School of Education are offered with a thesis requirement while others are offered with the option of completing either a thesis or a thesis equivalent. All MAT degree programs and some MEd programs require the completion of a research paper.

Master's Degree with Thesis

The master's degree with thesis is intended for graduate students who have pursued advanced graduate study in at least one field of education specialization and have demonstrated through the master's thesis the capability to plan and carry through a project of original research. The plan of studies should include at least 6 credits in thesis work.

Thesis Overview

The thesis overview is a written proposal for the thesis. The overview is presented to the master's committee, which consists of a minimum of three faculty members (at least one from another program or department) selected in consultation with the student by the research advisor and approved by the department. The student must submit a form for approval of the thesis committee. A student must be registered in the term during which the thesis overview meeting is scheduled. A unanimous vote of the master's committee is required for approval of the overview. The outcome of the overview meeting is submitted on the appropriate form along with a corrected copy of the overview to the Office of Admissions and Enrollment Services.

Approval of Research with Human Subjects

If the research proposed in the overview involves human subjects, the proposed research must be approved by the University Institutional Review Board (IRB) for the Protection of Human Subjects before it may be carried out. Information on materials that must be submitted and the procedures that must be followed for an IRB review are available in departmental offices and the Office of Admissions and Enrollment Services.

Advancement to Master's Candidacy

To be advanced to candidacy for the master's degree with thesis a student must:
• be admitted to full graduate status;
• have a minimum grade point average of 3.00 (transfer credits not considered);
• have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
• have passed the comprehensive examination;
• have an approved overview on file in the Office of Admissions and Enrollment Services; and
• if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.

Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.

Final Oral Examination

The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper

Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements

Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

Psychological Perspectives on Education

Choose 3.0 credits from the following 11 courses:

• EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
• EDUC 2007 - HUMAN LEARNING
• EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
• EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE
• PSYED 2127 - HUMAN LEARNING
• PSYED 2503 - DEVELOPMENT: CONCEPTION THROUGH EARLY CHILDHOOD
• PSYED 2504 - DVLP: MIDDLE CHLHD/ADOLESCENCE

Research Methods
Choose 3.0 credits from the following 10 courses:

- ADMPS 2356 - FIELD METHODS
- EDUC 2200 - DISCIPLINED INQUIRY
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- EDUC 2202 - EDUCATIONAL/PSYCHOLOGICAL MEASUREMENT
- EDUC 2205 - FIELD METHODS
- IL 2405 - INTRODUCTION TO ACTION RESEARCH METHODS
- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY
- PSYED 2072 - EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT
- PSYED 2519 - QUALITATIVE METHODS: PARTICIPANT OBSERVATION

Social and Cultural Perspectives on Education

Choose 3.0 credits from the following 23 courses:

- ADMPS 2050 - RACE AND RACISM IN EDUCATION AND SOCIETY
- ADMPS 2133 - GENDER AND EDUCATION
- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2307 - POLITICS AND HISTORY OF HIGHER EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
- ADMPS 2344 - LEADERSHIP IN SERVICE LEARNING
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION
- HPA 2322 - EVIDENCE BASED HEALTH PROGRAM PLANNING

Major Field Studies

Choose 24 credits from the following 10 courses:

- IL 2203 - LANGUAGE AND LANGUAGE SYSTEMS
- IL 2210 - LANGUAGE & THE READING PROCESS
- IL 2211 - COMPREHENSION AND VOCABULARY
- IL 2216 - LITERACY ASSESSMENTS AND INTERVENTION MODELS
- IL 2219 - DISCIPLINARY LITERACY
- IL 2232 - INTERNSHIP IN READING
Science Education, MAT

The University of Pittsburgh, School of Education, offers a post-baccalaureate program for Science teacher certification (grades 7-12), the Master of Arts in Teaching Program (MAT). This program is appropriate for individuals with non-education backgrounds in their baccalaureate studies. A strong science background and educational methodology are the foci of studies. Professional development is stressed through the use of teaching portfolios showing content background, teaching competencies, and technology in the design of instruction. Certification studies are available in Biology, Chemistry, Physics, Earth and Space Science, and General Science. Details are below:

- requires Teaching Interns to take and pass the Content Knowledge test (Praxis II) during the first semester of their program in order to obtain their Intern Certificate
- satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the national PRAXIS II Exam, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and in the internship)
- is completed in three terms (fall, spring, summer 1 session) beginning in late August of the admission year and concluding in mid-June of the following year
- consists of 36 credits of graduate course work combined with a maximum 4.5 day per week internship in a local school district from September through June

Click through to read the Science Education Academic Checklist.

Discover more about our programs through the words of current students and alumni in a Teacher Certification video. In addition, find out more about the new Urban Scholars via videos that follow four students as they go through a full year of the program, which prepares preservice teachers to be successful in urban schools by pairing them with skilled mentors who help build positive relationships with students.

Interested in finding out more about our teacher education programs? Admissions representatives can answer questions you have at an upcoming Teacher Education Information Session.

Master's Degree Requirements

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Common Requirements

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.

Acceptance of Transfer Credits

For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.
A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Graduate Catalog:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

**Grade Point Average/Academic Probation**

All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

**Statute of Limitations**

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

**Leave of Absence**

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year to may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

**Academic Integrity Policy**

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions
regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

Plan of Studies

Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.

Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.

Basic Areas of Education Requirement

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.

Psychological Perspectives on Education

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ADOLESCENCE

Social and Cultural Perspectives on Education

- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION

Research Methods

- EDUC 2200 - DISCIPLINED INQUIRY *
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
Additional Requirements

Master's Comprehensive Examination

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or department to which the student has been admitted. Procedures and schedules of administration are available from the program or department. *The student must be enrolled to take the comprehensive examination.

*See also Comprehensive Examination under Regulations Pertaining to Master of Arts and Master of Science Degrees. The University-wide regulations on comprehensive examinations detailed there apply to all School of Education master's programs.


Some MA and MS degree programs within the School of Education are offered with a thesis requirement while others are offered with the option of completing either a thesis or a thesis equivalent. All MAT degree programs and some MEd programs require the completion of a research paper.

Master's Degree with Thesis

The master's degree with thesis is intended for graduate students who have pursued advanced graduate study in at least one field of education specialization and have demonstrated through the master's thesis the capability to plan and carry through a project of original research. The plan of studies should include at least 6 credits in thesis work.

Thesis Overview

The thesis overview is a written proposal for the thesis. The overview is presented to the master's committee, which consists of a minimum of three faculty members (at least one from another program or department) selected in consultation with the student by the research advisor and approved by the department. The student must submit a form for approval of the thesis committee. A student must be registered in the term during which the thesis overview meeting is scheduled. A unanimous vote of the master's committee is required for approval of the overview. The outcome of the overview meeting is submitted on the appropriate form along with a corrected copy of the overview to the Office of Admissions and Enrollment Services.

Approval of Research with Human Subjects

If the research proposed in the overview involves human subjects, the proposed research must be approved by the University Institutional Review Board (IRB) for the Protection of Human Subjects before it may be carried out. Information on materials that must be submitted and the procedures that must be followed for an IRB review are available in departmental offices and the Office of Admissions and Enrollment Services.

Advancement to Master's Candidacy

To be advanced to candidacy for the master's degree with thesis a student must:

• be admitted to full graduate status;
• have a minimum grade point average of 3.00 (transfer credits not considered);
• have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
• have passed the comprehensive examination;
• have an approved overview on file in the Office of Admissions and Enrollment Services; and
• if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.

Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.

Final Oral Examination

The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper

Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements

Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

Master of Arts in Teaching Degree

This option provides a comprehensive teacher preparation program for qualified science area graduates who want to coordinate certification study with advanced-level studies in education. Applicants must have completed or be able to complete prerequisite academic course work before beginning MAT studies. This 36-credit program for full-time students involves 10 consecutive months of study (September - June).

Jumpstart

Weeks 1-2; 40 hours

• IL 2430 - TEACHING & LEARNING IN SECONDARY SCIENCE 1
• IL 2741 - PRACTICUM IN SECONDARY SCIENCE 1
• IL 2845 - PRACTICUM IN SECONDARY SCIENCE
• IL 2431 - TEACHING & LEARNING IN SECONDARY SCIENCE 2
• IL 2502 - STUDNT W/DISAB IN SECNDRY CLSSRM
• IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
Social Studies Education, MAT

The University of Pittsburgh, School of Education, offers a post-baccalaureate program for Secondary Social Studies certification (grades 7-12), the Master of Arts in Teaching (MAT) Program. Details of the MAT program are outlined below:

- requires Teaching Interns to take and pass the Content Knowledge test (Praxis II) during the first semester of their program in order to obtain their Intern Certificate
- satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the national PRAXIS II Exam, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and in the internship)
- is completed in three terms (fall, spring, summer 1 session) beginning in late August of the admission year and concluding in mid-June of the following year
- consists of 36 credits of graduate course work combined with a maximum 4.5 day per week internship in a local school district from September through June

Master's Degree Requirements

The requirements presented in this section are school-wide requirements that have been established in addition to the University-wide requirements detailed under general academic regulations. Students should review the general academic regulations section in addition to the specific school information detailed below.

Common Requirements

All master's degrees awarded by the School of Education require the completion of an approved plan of studies consisting of a minimum of 36 credits (including 9 credits in Basic Areas of Education) and the passing of a comprehensive examination.

Acceptance of Transfer Credits

For University-wide rules, see Acceptance of Transfer Credits under General Academic Regulations. School-specific detail follows.

A maximum of 6 transfer credits may be counted toward an MA or MS degree. A maximum of 12 transfer credits may be counted toward an MAT or MEd degree. Only graduate courses taken as a graduate student may be transferred and applied toward a master's degree. The only exception are courses taken while an undergraduate student at the University of Pittsburgh during the final term of undergraduate study that meet the following requirements, as explained in the Graduate Catalog:

Undergraduate students who need fewer than 15 credits to complete requirements for the baccalaureate degree and who intend to continue study toward an advanced degree may be permitted during their final term to register for graduate courses that will later apply toward a graduate degree. The student must obtain written permission from the school of proposed graduate study that the courses may count when and if the student is
admitted into the graduate degree program. This privilege should not be granted if the proposed total program exceeds a normal full-time load. Although these credits will appear on the undergraduate transcript, they will not count toward fulfilling undergraduate degree requirements. They will be posted as advanced standing credits on the graduate transcript.

**Grade Point Average/Academic Probation**

All students enrolled in master's degree programs are required to maintain a grade point average (GPA) of at least 3.000. The cumulative GPA is based on all course work taken after enrollment in the appropriate graduate program. A student is automatically placed on academic probation when the cumulative GPA after 6 credits or more, exclusive of transfer credits, falls below 3.00. Although the credits allowed for acceptable work completed elsewhere by students enrolled in the School of Education count toward the total number of credits required for the graduate degree, the grades earned in such courses are not included in GPA computations.

While on probation students are limited to registering only for courses in which a letter grade is given. To be removed from probation status, a student must achieve a 3.50 GPA in 6 credits or more. A student can only be placed on academic probation status once during their program of study. Students placed on academic probation status will receive notification in the form of a letter from the School of Education, and they will be recommended to seek guidance from their academic advisor.

Ordinarily, students are required to terminate graduate study after two terms on probation. A student who does not meet the GPA or credit requirements will be dismissed from the School of Education, unless serious extenuating circumstances exist. The request for continuation must include a recommendation made by the Department Chair (or designated faculty member) and the academic advisor, with the recommendation approved by the Dean of the school.

**Statute of Limitations**

All requirements for a master's degree must be completed within a period of four consecutive calendar years from the student's initial registration for master's study in an MA or MS degree program or within five years in an MAT or MEd program.

Under certain conditions, the dean/associate dean may grant an extension of a student's statute of limitations. The request for extension must include a recommendation made by the academic advisor, with the recommendation approved by the Dean of the school. The statute of limitations can only be extended once.

**Leave of Absence**

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of one year to may be granted to master's students. The rationale for the leave of absence must be stated in advance, recommended to the dean by the department, and approved by the dean. If approved, the time of the leave shall not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

**Academic Integrity Policy**

Students have the right to be treated by faculty in a fair and conscientious manner in accordance with the ethical standards generally recognized within the academic community (as well as those recognized within the profession). Students have the responsibility to be honest and to conduct themselves in an ethical manner while pursuing academic studies. Should a student be accused of a breach of academic integrity or have questions regarding faculty responsibilities, procedural safeguards including provisions of due process have been designed to protect student rights. These general procedures may be found in Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures at www.provost.pitt.edu. The School of Education has its own academic integrity policies, posted on the School of Education website. Students are encouraged to review these school-specific guidelines as well.

**Plan of Studies**
Before completion of 15 credits, students, in consultation with their academic advisor, should complete a Plan of Studies that conforms to program requirements. The plan of studies, approved by the academic advisor and the program coordinator, is filed in the Office of Admissions and Enrollment Services.

Any changes in the Plan of Studies must be approved by the academic advisor and the program coordinator, conform to program requirements, and be filed in the Office of Admissions and Enrollment Services. At the time of graduation, completed courses must comply with the approved Plan of Studies.

**Basic Areas of Education Requirement**

All master's degrees conferred by the School of Education require a minimum of 9 credits of study from the Basic Areas of Education (BAE), 3 credits each from courses offered in the content areas of psychological perspectives on education, social and cultural perspectives on education, and research methods. A maximum of 6 credit hours of BAE courses may be taken from those offered within a single department. The courses in each area that may be used to meet this requirement are listed below. See also individual program curricula for exceptions to how their master's degree programs meet the Basic Areas of Education Requirement.

**Psychological Perspectives on Education**

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/ ADOLESCENCE

**Social and Cultural Perspectives on Education**

- EDUC 2100 - EDUCATION AND SOCIETY
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
- EDUC 2105 - SOCIOLOGY OF EDUCATION
- EDUC 2106 - EDUCATION AND CULTURE
- EDUC 2107 - EVIDENCE BASED HEALTH PROGRAM PLANNING
- EDUC 2108 - STATE/NATIONAL POLITICS OF EDUCATION
- EDUC 2109 - GENDER IN EDUCATION
- EDUC 2110 - GENDER AND EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION

**Research Methods**

- EDUC 2200 - DISCIPLINED INQUIRY *
- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- EDUC 2202 - EDUCATIONAL/PSYCHOLOGICAL MEASUREMENT
- EDUC 2205 - FIELD METHODS

*Enrollment limited to MAT students

**Additional Requirements**
Master's Comprehensive Examination

The School of Education requires a comprehensive examination for all master's degrees. The comprehensive examination is designed to assess the student's mastery of the general field of graduate study. The comprehensive examination is constructed, administered, and scored by the program or department to which the student has been admitted. Procedures and schedules of administration are available from the program or department. *The student must be enrolled to take the comprehensive examination.

*See also Comprehensive Examination under Regulations Pertaining to Master of Arts and Master of Science Degrees. The University-wide regulations on comprehensive examinations detailed there apply to all School of Education master's programs.


Some MA and MS degree programs within the School of Education are offered with a thesis requirement while others are offered with the option of completing either a thesis or a thesis equivalent. All MAT degree programs and some MEd programs require the completion of a research paper.

Master's Degree with Thesis

The master's degree with thesis is intended for graduate students who have pursued advanced graduate study in at least one field of education specialization and have demonstrated through the master's thesis the capability to plan and carry through a project of original research. The plan of studies should include at least 6 credits in thesis work.

Thesis Overview

The thesis overview is a written proposal for the thesis. The overview is presented to the master's committee, which consists of a minimum of three faculty members (at least one from another program or department) selected in consultation with the student by the research advisor and approved by the department. The student must submit a form for approval of the thesis committee. A student must be registered in the term during which the thesis overview meeting is scheduled. A unanimous vote of the master's committee is required for approval of the overview. The outcome of the overview meeting is submitted on the appropriate form along with a corrected copy of the overview to the Office of Admissions and Enrollment Services.

Approval of Research with Human Subjects

If the research proposed in the overview involves human subjects, the proposed research must be approved by the University Institutional Review Board (IRB) for the Protection of Human Subjects before it may be carried out. Information on materials that must be submitted and the procedures that must be followed for an IRB review are available in departmental offices and the Office of Admissions and Enrollment Services.

Advancement to Master's Candidacy

To be advanced to candidacy for the master's degree with thesis a student must:

- be admitted to full graduate status;
- have a minimum grade point average of 3.00 (transfer credits not considered);
- have an approved plan of studies on file in the Office of Admissions and Enrollment Services;
- have passed the comprehensive examination;
- have an approved overview on file in the Office of Admissions and Enrollment Services; and
- if the proposed research involves human subjects, have a letter on file in the Office of Admissions and Enrollment Services from the IRB approving the proposed research.
Thesis Preparation

The thesis research is completed and the thesis is prepared under the direction of the research advisor according to the approved overview. In preparing the thesis, the student must follow the University's ETD Format Guidelines, and specific departmental or program requirements.

Final Oral Examination

The completed thesis is submitted to the master's committee for the final oral examination. The student must be registered in the term during which the final oral examination is scheduled. The final oral examination is devoted primarily to the thesis, and an affirmative vote by a majority of the committee members is required to pass the examination. One corrected copy of the thesis as approved by the master's committee must be filed, along with one copy of a research advisor approved abstract and the form showing a passed final oral examination, no later than one week before the end of the term during which the student expects to graduate. The dean/associate dean must approve any exception to this requirement.

Master's Degree with Thesis Equivalent Option/Research Paper

Master's degrees with the thesis equivalent option or research paper requirement are intended for graduate students who have pursued advanced study in at least one field of educational specialization and have demonstrated capability of presenting information relevant to an issue or problem in education. The plan of studies should include at least 3 credits in a research seminar, supervised research, or directed study involving research in the student's focus area.

Research Paper Requirements

Each candidate for the master's degree with the thesis equivalent option or research paper requirement must complete, in acceptable form, a research paper that demonstrates the ability to locate, organize, and summarize information bearing on an issue or problem in education. This project is usually initiated and completed in the research seminar of the student's major. For certain majors, this requirement may be met by other means, such as successful exhibits or demonstrations.

Master of Arts in Teaching Degree

This option provides qualified graduates in the social science disciplines with the opportunity to obtain Instructional I teacher certification in social studies education for grades seven through 12 and the MAT degree. All applicants are required to have completed 30 credits in one of the social science disciplines along with another 18-30 credits across the other six disciplines in addition to general arts and sciences prerequisites. The MAT option requires 36 credits.

- IL 2260 - TEACHING & LEARNING IN SECONDARY SOCIAL STUDIES 1
- IL 2262 - TEACHING & LEARNING IN SECONDARY SOCIAL STUDIES 2
- IL 2278 - PRACTICUM IN SECONDARY SOCIAL STUDIES
- IL 2502 - STUDNT W/DISAB IN SECNDRY CLSSRM
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
- EDUC 2200 - DISCIPLINED INQUIRY
- IL 2827 - TEACHING AND LEARNING IN SECONDARY SOCIAL STUDIES 3
- IL 2520 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETTINGS IN SEC CLSSRM
- IL 2883 - INTERNSHIP - SOCIAL STUDIES
- IL 2828 - STUDENT TEACHING SEMINAR-SOCIAL STUDIES
- IL 2990 - RESEARCH SEMINAR FOR MAT INTERNS
- PSYED 2265 - ATTENTIONAL TEACHING PRACTICES 1
- PSYED 2266 - ATTENTIONAL TEACHING PRACTICES 2
Social Studies Education, MEd

The structure for the online social studies MEd is divided into six distinct academic areas. Each area is made up of content, knowledge, and skills critical to the development of graduate-level practitioners and scholars. The program requires a minimum of 36 credits for completion. Degree requirements include:

- 15 credits (5 courses) in Social Studies-specific Pedagogy;
- 3 credits (1 course) in Psychological Perspectives on Education;
- 3 credits (1 course) in Social and Cultural Perspectives on Education;
- 3 credits (1 course) in MEd Research Seminar;
- 3 credits (1 course) in MEd Research Methods;
- 9 credits (3 courses) in approved electives; and
- a written comprehensive exam.

Social Studies Theory and Pedagogy

Choose 15.0 credits from the following 6 courses:

- IL 2219 - DISCIPLINARY LITERACY
- IL 2265 - ISSUES IN HISTORY EDUCATION
- IL 2269 - SPECIAL TOPICS: SOCIAL STUDIES
- IL 2277 - COMPARATIVE AND GLOBAL PERSPECTIVES ON EDUCATION
- IL 2710 - ADVANCED SOCIAL STUDIES METHODS
- IL 2712 - HISTORICAL THINKING AND HISTORIOGRAPHY: SECONDARY SOCIAL STUDIES CLASSROOM

Psychological Perspectives on Education

- EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION

Social and Cultural Perspectives on Education

- EDUC 2100 - EDUCATION AND SOCIETY

Research Seminar

- IL 2290 - RESEARCH SEMINR FOR MED STUDENTS

Research Methods

Choose 3.0 credits from the following courses

- EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
- IL 2405 - INTRODUCTION TO ACTION RESEARCH METHODS
- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY

Electives

Choose 9 credits from the following options:
• Advisor-approved 2000-level or above ADMPS, EDUC, or IL courses;
• Advisor-approved 2000-level Arts and Sciences (history, political science, geography, psychology, sociology, anthropology, or economics) courses

Vision Studies Special Education - Vision Education Certification, MEd

The School of Education at the University of Pittsburgh requires all students pursuing a Master's of Education degree (MEd) to complete a minimum of 36-credits, 12 of which are the required graduate-level general education courses listed.

Applicants may choose to pursue the MEd degree through a variety of options (with or without certification):

• MEd degree with single certification as a Teacher of Students with Visual Impairments (TVI)
• MEd degree with single certification as an Orientation and Mobility (O&M) Specialist
• MEd degree with dual certification (TVI and O&M)
• MEd degree without certification but with a Vision Studies Area of Concentration

Students pairing the degree in combination with any certification option will complete additional credits hours to fulfill program requirements. Additionally, the MEd program requires students to successfully complete the Vision Studies Comprehensive Exam. The Comprehensive Exam is a proctored three-hour exam based on the student's area of concentration and is completed towards the end of their MEd degree program.

MEd Vision Studies Required Courses

• EDUC 2201 - INTRODUCTION TO RESEARCH METHODOLOGY
• EDUC 2100 - EDUCATION AND SOCIETY
• EDUC 2000 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT FOR EDUCATION
• IL 2690 - RESEARCH SEMINAR ONLINE

Applied Behavior Analysis Certificate

Certificate Program

• IL 2564 - APPLIED BEHAVIORAL ANALYSIS 1: FUNDAMENTALS 1
• IL 2565 - APPLIED BEHAVIORAL ANALYSIS 2: FUNDAMENTALS 2
• IL 2566 - APPLIED BEHAVIORAL ANALYSIS 3: APPLICATIONS IN DEVELOPMENTAL DISABILITIES
• IL 2567 - APPLIED BEHAVIORAL ANALYSIS 4: EMOTIONAL BEHAVIORAL DISABILITIES OF CHILDREN AND ADOLESCENTS
• IL 2568 - APPLIED BEHAVIORAL ANALYSIS 5: CURRENT DEVELOPMENTS IN APPLIED BEHAVIORAL ANALYSIS
• IL 2578 - APPLIED BEHAVIORAL ANALYSIS 6: ETHICS

BACB Requirement (Optional)

For students wishing to pursue the national BCBA

• IL 2569 - APPLIED BEHAVIORAL ANALYSIS PRACTICUM

Autism Spectrum Disorders Endorsement/Certificate

The University of Pittsburgh School of Education Autism Certificate is a 15-credit program, consisting of (a) a core of three required 3-credit graduate level courses (9 credits total), (b) 3 or 4 credits of practicum experience with children with autism, and (c) one 3 credit elective course.
Core Courses

- IL 2505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS
- IL 2506 - SOCIAL AND COMMUNICATIVE INTERVENTIONS: AUTISM
- IL 2586 - AUTISM INTERVENTIONS IN SCHOOL AND COMMUNITY SETTINGS

Practicum

Choose 3.0 credits for the following courses

- IL 2850 - PRACTICUM - PRESCHOOL
- IL 2780 - AUTISM ENDORSEMENT PRACTICUM

Elective Courses

Choose 3.0 credits from the following courses

- IL 2509 - APPLD BHVR ANAL/POSTV BHVR SUPRT
- IL 2511 - CURR PRG DVLP-LOW INCDCNC DISABS
- IL 2585 - TECHNOLOGY-BASED INTERVENTIONS: AUTISM

Early Childhood Education - Primary Plus: PreK-4 Teacher Certificate

The Primary Plus: PreK-4 Teacher Certification Program prepares students to teach young children ages 4-9 in Pre-kindergarten and K-4 classrooms and to work collaboratively with parents and other professionals. Students will develop skills for employment in public and private schools and early childhood centers. Through coursework and field experiences with pre-kindergarteners and children in grades K-4, students will acquire an integrated understanding of academic content and child development in diverse inclusive settings. The program must be completed as a full-time student. No part-time option is available.

The Primary Plus: PreK-4 Teacher Certification Program is intended for individuals from a wide range of undergraduate degree and work backgrounds. A student who successfully completes the program and passes both the PECT (Pennsylvania Education Certification Test) in PreK-4 and the PA Statewide Evaluation Form for the Student Professional Knowledge and Practice (PDE 430) is eligible to apply for a Pennsylvania Instructional I certificate for PreK-4.

- prepares qualified graduates for initial certification in PreK-4 Early Childhood Education
- lasts three consecutive terms for full-time students - Summer II, Fall, Spring
- requires two full days per week in a PreK practicum and one full day per week at a K-4 student teaching site during Fall Term
- requires twelve full weeks of student teaching in a K-4 classroom in the Spring term
- requires obtaining all Federal and PA state clearances before entering schools

Click through to read the Primary Plus PreK-4 Teacher Certification Academic Checklist.

Interested in finding out more about our teacher education programs? Admissions representatives can answer questions you have at an upcoming Teacher Education Information Session.

Requirements

The Primary Plus: PreK-4 Teacher Certification Program prepares students to teach young children ages 4-9 in Pre-kindergarten and K-4 classrooms and to work collaboratively with parents and other professionals. Students will develop skills for employment in public and private schools and early childhood centers. Through coursework and field experiences with pre-kindergarteners and children in grades K-4, students will acquire an integrated understanding of academic content and child development in diverse inclusive settings. The program is designed for full-time study (Summer II, Fall and Spring Semesters).
English Education - English Instructional I Certificate

Requirements

- IL 2230 - TEACHING AND LEARNING IN SECONDARY ENGLISH 1
- IL 2245 - TEACHING & LEARNING IN SECONDARY ENGLISH 2
- IL 2725 - PRACTICUM IN SECONDARY ENGLISH EDUCATION
- IL 2502 - STUDNT W/DISAB IN SECNDRY CLSSRM
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
- IL 2820 - TEACHING AND LEARNING IN SECONDARY ENGLISH 3
- IL 2520 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETTINGS IN SEC CLSSRM
- IL 2881 - INTERNSHIP-ENGLISH OR COM EDUC
- IL 2824 - STUDENT TEACHING SEMINAR IN ENGLISH OR COMMUNICATION EDUCATION
- PSYED 2265 - ATTENTIONAL TEACHING PRACTICES 1
- PSYED 2266 - ATTENTIONAL TEACHING PRACTICES 2

PY Core Curriculum (Instructional I Certification)

Foreign Language Education - Foreign Language Instructional I Certificate

The University of Pittsburgh, School of Education, offers two post-baccalaureate programs for Foreign Language teacher certification (grades K-12). The two programs are an Instructional I Teacher Certificate Program and a Master of Arts in Teaching (MAT) Program. Certification Studies are available in French, German, Italian, Spanish, Chinese, Japanese, or Latin. Native speakers of the language of certification are not exempt from prerequisite course work in the culture, civilization literature, and structure of their language. Applicants who are non-native speakers of the language of certification are also required to achieve at least Advanced-Low rating on an oral proficiency interview by an individual certified by the American Council on the Teaching of Foreign Languages. Details of the Instructional I Teaching Certificate Program are outlined below.

- satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the Writing Proficiency Test (WPT) and national PRAXIS II Exam of Fundamental Content Knowledge, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and student teaching)
- can be completed in two terms (fall and spring) of 15 credit hours each
- can be designed to accommodate part-time students
- requires 10 hours per week at a local school district in the fall term and a full-time student teaching experience in the spring term
- requires obtaining all Federal and PA state clearances before entering schools
- contains 18 credits which can be applied within three years toward a Master of Education degree
- students may apply for financial aid

Certificate Requirements

- IL 2252 - TEACHING AND LEARNING IN K-12 FOREIGN LANGUAGE 1
- IL 2882 - INTERNSHIP - FOREIGN LANGUAGE
- IL 2258 - TEACHING & LEARNING IN SECONDARY FOREIGN LANGUAGE 2
- IL 2892 - PRACTICUM IN K-12 FOREIGN LANGUAGE
- IL 2502 - STUDNT W/DISAB IN SECNDRY CLSSRM
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
- IL 2520 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETTINGS IN SEC CLSSRM
- IL 2826 - STUDENT TECHNG SEM-FOREIGN LANG
Mathematics (7-12) Instructional I Certificate

The University of Pittsburgh, School of Education, offers two post-baccalaureate programs for Mathematics teacher certification (grades 7-12). The two programs are an Instructional I Teaching Certificate and a Master of Arts in Teaching Program (MAT). Details of the Instructional I Teaching Certificate are outlined below.

- satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the national PRAXIS II Exam, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and student teaching)
- can be completed in two terms (fall and spring) of 15 credit hours each
- can be designed to accommodate part-time students
- requires 10 hours per week at a local school district in the fall term and a full-time student teaching experience in the spring term
- requires obtaining all Federal and PA state clearances before entering schools
- contains 18 credits which can be applied within three years toward a Master of Education degree
- students may apply for financial aid

Requirements

A Secondary Content Area teacher certificate (English, Math, Science, Social Studies, or Foreign Language Education) is combined with a second teaching certificate for Special Education grades 7-12 and a Master of Education in Special Education. Teaching candidates will study evidence-based practices to improve adolescent learning through Special Education and Content Area coursework. Candidates will develop their professional teaching skills during practical experiences, in a variety of public middle and high school classrooms. The MOSAIC program is designed to provide future teachers with the skills, knowledge and experiences to be effective teachers of adolescents both with and without disabilities.

- IL 2254 - TEACHING & LEARNING IN K-12 FOREIGN LANGUAGE 3
- PSYED 2265 - ATTENTIONAL TEACHING PRACTICES 1
- PSYED 2266 - ATTENTIONAL TEACHING PRACTICES 2

Reading Specialist Certificate of Advanced Study K-12

The School of Education offers preparation that leads to certification as a Reading Specialist (K-12). Coursework is completed in a blended format of on-campus and online study. The curriculum for the Reading Specialist Certificate of Advanced Study (K-12) is designed to provide candidates with opportunities to build specialized knowledge, engage in principled practice in supervised settings, and prepare for leadership roles in schools and school districts. The curriculum addresses the International Reading Association's Standards for Reading Professionals (2010) in the areas of:

- Foundational Knowledge
- Curriculum and Instruction
Requirements

It is required that applicants have an initial teaching certificate. If initial certification does not include PDE-required special education courses (9 credits) and an English Language Learners course (3 credits), then those courses must be completed before application for certification. Teaching experience is advised. A minimum of 24 credit hours is required.

- IL 2203 - LANGUAGE AND LANGUAGE SYSTEMS
- IL 2211 - COMPREHENSION AND VOCABULARY
- IL 2216 - LITERACY ASSESSMENTS AND INTERVENTION MODELS
- IL 2217 - LITERACY PRACTICUM WITH ELEMENTARY STUDENTS
- IL 2219 - DISCIPLINARY LITERACY
- IL 2218 - LITERACY PRACTICUM WITH ADOLESCENT STUDENTS
- IL 2243 - THEORY & PRAC IN TCHNG WRITING
- IL 2281 - LEADERSHIP SCHOOL LITERACY PROGM

Science Education - Science (7-12) Instructional I Certificate

The University of Pittsburgh, School of Education offers a post-baccalaureate program for Secondary Science teacher certification (grades 7-12). Certification Studies are available in Biology, Chemistry, Physics, Earth and Space Science, and General Science. Certification in more than one science is also available. Details are outlined below.

- satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the national PRAXIS II Exam, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and student teaching)
- can be completed in two terms (fall and spring) of 15 credit hours each
- can be designed to accommodate part-time students
- requires 10 hours per week at a local school district in the fall term and a full-time student teaching experience in the spring term
- requires obtaining all Federal and PA state clearances before entering schools
- contains 18 credits which can be applied within three years toward a Master of Education degree
- students may apply for financial aid

Requirements

- IL 2430 - TEACHING & LEARNING IN SECONDARY SCIENCE 1
- IL 2845 - PRACTICUM IN SECONDARY SCIENCE
- IL 2431 - TEACHING & LEARNING IN SECONDARY SCIENCE 2
- IL 2502 - STUDNT W/DISAB IN SECNDRY CLSSRM
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
- IL 2432 - TEACHING & LEARNING IN SECONDARY SCIENCE 3
- IL 2520 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETTINGS IN SEC CLSSRM
- IL 2843 - STUDENT TEACHING SEM - SCIENCE
- IL 2496 - INTERNSHIP - SCIENCE
- PSYED 2265 - ATTENTIONAL TEACHING PRACTICES 1
- PSYED 2266 - ATTENTIONAL TEACHING PRACTICES 2
Social Studies Education - Social Studies (7-12) Instructional I Certificate

The University of Pittsburgh, School of Education, offers two post-baccalaureate programs for Social Studies teacher certification. The two programs are an Instructional I Teaching Certificate Program and a Master of Arts in Teaching (MAT) Program. Details of the Instructional I Teaching Certificate are outlined below.

- satisfies the requirements for a Pennsylvania Instructional I Certificate (pending passing scores on the national PRAXIS II Exam, successful completion of the PA Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430), and satisfactory performance in courses and student teaching)
- can be completed in two terms (fall and spring) of 15 credit hours each
- can be designed to accommodate part-time students
- requires 10 hours per week at a local school district in the fall term and a full-time student teaching experience in the spring term
- requires obtaining all Federal and PA state clearances before entering schools
- contains 18 credits which can be applied within three years toward a Master of Education degree
- students may apply for financial aid

Requirements

- IL 2260 - TEACHING & LEARNING IN SECONDARY SOCIAL STUDIES 1
- IL 2262 - TEACHING & LEARNING IN SECONDARY SOCIAL STUDIES 2
- IL 2278 - PRACTICUM IN SECONDARY SOCIAL STUDIES
- IL 2502 - STUDNT W/DISAB IN SECNDRY CLSSRM
- IL 2257 - TEACHING ENGLISH LANGUAGE LEARNERS
- IL 2827 - TEACHING AND LEARNING IN SECONDARY SOCIAL STUDIES 3
- IL 2520 - LITERACY ASSESSMENT & INSTRUCTION FOR CHILDREN WITH DISABILITIES IN INCLUSIVE SETTINGS IN SEC CLSSRM
- IL 2883 - INTERNSHIP - SOCIAL STUDIES
- IL 2828 - STUDENT TEACHING SEMINAR-SOCIAL STUDIES
- PSYED 2265 - ATTENTIONAL TEACHING PRACTICES 1
- PSYED 2266 - ATTENTIONAL TEACHING PRACTICES 2

Special Education Pre-K - 8 Teacher Certification

Students pursuing a Special Education PreK-8 certification-only track are required to complete a minimum of 30 credits beyond the prerequisite course work. Most students complete the certification program in three semesters. Students begin with two courses in the summer session and then complete two semester of full-time study in the fall and spring semesters. Each year a new cohort of students begins the program together starting in the summer. With the exception of the first summer term, special education courses are offered in the evening.

During the fall term students are required to spend one day per week in each school to which they are assigned for student teaching in preparation for student teaching in the spring. Students complete two different full-time student teaching experiences in the spring, each of eight weeks duration. During the student teaching experiences, teacher candidates are closely supervised by both a university supervisor and an experienced mentor teacher. The School of Education Office of Placement Services and Clinical Practices will arrange field placements for students.

Requirements

The Special Education Teacher Preparation PreK-8 (SETP PreK-8) specialization is a post baccalaureate program with two paths for completion. One option combines special education teacher certification with a Master of Education (MEd) degree in Instruction and Learning. The other option is for special education teacher certification only. This specialization prepares special educators to teach children and youth with a range of disabilities and emphasizes educational needs rather than categorical labels. Individuals holding the PreK-8 certification may provide specialized support and instruction to eligible students with cognitive, behavior, physical, and/or health disabilities within the specified grade level range in a variety of
settings. Pennsylvania requires all special educators to also be initially certified to teach the general education population and curriculum. In that case, these programs accept previously certified elementary level teachers and reading specialists and furthers their ability to effectively teach a diverse student body.

Additionally, the Combined Accelerated Studies in Education (CASE) program is a five-year program that combines undergraduate and graduate work. Students who successfully complete the program will receive a Bachelor of Science (BS) degree in Applied Developmental Psychology and a Masters of Education (Med) degree in Instruction and Learning. This program prepares students to apply for dual teacher certification in PreK-Grade 4 and Special Education PreK-8. The CASE program provides prospective teachers with a rich blend of coursework and field experiences. Students who complete the program will gain a strong background in the liberal arts along with the specific professional and pedagogical knowledge and practice skills necessary to be an effective educator.

- IL 2509 - APPLD BHVR ANAL/POSTV BHVR SUPRT
- IL 2511 - CURR PRG DVLP-LOW INCIDNC DISABS
- IL 2512 - ASSMNT INSTRUC-HIGH INCIDNC DISAB
- IL 2513 - INSTRNL METH-HIGH INCIDNC DISABS
- IL 2522 - ED STDNT EMOTIONAL DISTURBANCE
- IL 2751 - METHODS AND MANAGEMENT IN SP ED
- IL 2853 - STUDENT TEACHING - STUDENTS WITH HIGH INCIDENCE OF DISABILITIES
- IL 2854 - STUDENT TEACHING WITH LOW INCIDENCE OF DISABILITIES
- IL 2858 - STUDENT TEACHING SEMINAR - SPECIAL EDUCATION TEACHER PREPARATION
- IL 2591 - LITERACY TUTORING

**Specialization Course**

Choose 3.0 credits from the following courses.

(Students may also choose a content area course in Math, Science, Social Studies, or English if approved by their advisor)

- IL 2220 - READING IN CONTENT AREAS
- IL 2505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS
- IL 2506 - SOCIAL AND COMMUNICATIVE INTERVENTIONS: AUTISM
- IL 2525 - TECHNOLOGY FOR CHILDREN WITH VI
- IL 2529 - BRAILLE
- IL 2530 - INTRODUCTION TO THE EYE AND LOW VISION
- IL 2531 - EDUCATION OF CHILDREN WITH VI 1
- IL 2532 - EARLY INTERVENTION FOR CHILDREN WITH VI
- IL 2533 - ORIENTATION AND MOBILITY FOR THE TVI
- IL 2548 - SPECIAL TOPICS SPECIAL EDUCATION
- IL 2562 - ASESMNT YOUNG CHILDRN DISABLTY
- IL 2707 - FIELD SEMINAR IN EARLY CHILDHOOD EDUCATION
- IL 2906 - COMMUNITY RESOURCES SEMINAR: YOUNG CHILDREN AND FAMILIES
- IL 3542 - WEB CURRNT ISSUES & TRENDS SP ED

**Supervisor of Special Education Certificate**

Through six courses and an internship (19 credits), the program provides candidates with the opportunity to develop and knowledge of and competence in the fundamental concepts of supervising special education programs.
Requirements

This certification option in special education is built on the assumption that most supervisory operations in education are, in principle, generic, with their fundamentals of theory and practice in common. The major distinguishing characteristic of this option is the application of supervisory theory to the context of the special education of exceptional children and youth. Specific emphasis is placed upon activities, relationships, facilities, agencies, persons, and processes that are peculiar to or have particular relevance to special education. The student completes a plan of studies encompassing such courses as supervision, curriculum development, current and legal issues in the specialization, and a supervision internship.

- ADMPS 2115 - SUPERVISION AND TEACHER LEARNING
- IL 3571 - WEB SUPERVISION SPECIAL EDUCATN
- IL 3542 - WEB CURRNT ISSUES & TRENDS SP ED
- IL 2926 - WEB LEGL & LEGISLTV FDS OF SP ED
- IL 3501 - WEB FINANCING SPECIAL EDUCATION
- IL 3541 - WEB INSTRNL PRACTICES SP EDUC
- IL 3596 - INTERNSHIP IN SPECIAL EDUCATION

Vision Studies - Dual Certification in Vision Education and Orientation and Mobility Certificate

Graduates with dual certification integrate skills acquired from both the Teacher of Students with Visual Impairments (TVI) and Orientation and Mobility (O&M) components of the program into a more comprehensive service. Dually certified graduates are highly desirable to potential employers. A teacher who has earned Pennsylvania Department of Education (PDE) certification as a TVI and national professional certification in O&M from the Academy for Certification of Vision Rehabilitation & Education Professionals (ACVREP) (http://www.acvrep.org) will have a stronger background in motor development, sensory training, concept development, and movement. See the single certification O&M overview or the single certification TVI overview for more specific details regarding each certification option.

Students gaining admission to the dual TVI & O&M certification program will be admitted into a fall term cohort. In this hybrid program, the didactic courses are offered online in the fall, spring, and summer terms. Within the TVI certification tract, all courses are offered online, but the summer provides a time for face-to-face classes in Pittsburgh on the Oakland campus. Additionally, the O&M program requires students to participate in one Summer 6-week on-campus experience.

In addition to these didactic courses, students complete three levels of clinical practice. The first is an observational experience focused on TVI and O&M instructional practices. The second is a TVI student teaching practicum. Students apply for a PDE Instructional I teaching certificate upon successful completion of the TVI didactic coursework, the student teaching practicum, and the required Praxis II exams.

The third practicum is an O&M Internship required by ACVREP, which is scheduled at the completion of the O&M courses. Students are also required to attend a weekend workshop at Pitt's Oakland Campus prior to beginning the O&M internship. Students completing the academic and clinical requirements of the O&M curricula must pass a national certification exam in O&M (see the ACVREP website for details) in order to become eligible for O&M certification.

Students have multiple options towards program completion. The dual certification courses are typically offered in a two-course per term pairing. Students may also combine a Master's of Education (MEd) degree to their certification program of study. Students needing to complete a MEd degree and/or co-requisite courses may add additional courses to become a full-time student. The dual certification program takes approximately 3 years to complete.

Vision Studies - Orientation and Mobility (O&M) Certificate

If you are already certified in a vision related field of study (e.g., TVI, Rehab Teacher for the Blind, or Low Vision Therapist), then you only need to complete the 21-credits of O&M Certification courses listed on the O&M Suggested Plan of Study (Option 1). If you do not possess certification in a vision related field of study, you must complete the 21-credits of O&M Certification courses plus 11-credits of additional TVI Certification courses (Option 2).
In addition, students complete and O&M internship which is required by the national certifying body ACVREP and is scheduled at the completion of the O&M didactic coursework. Students are also required to attend a weekend workshop on Pitt's Oakland campus prior to the beginning of the O&M internship. This single certification program takes approximately 2 years to complete.

Students may also combine a M.Ed. degree with the O&M certification program.

**O&M Certification Curricula (Option 1)**

All courses are 3 credits unless otherwise indicated.

- IL 2540 - FOUNDATIONS OF ORIENTATION AND MOBILITY
- IL 2750 - TECHNIQUES OF ORIENTATION AND MOBILITY 1
- IL 2752 - TECHNIQUES OF ORIENTATION AND MOBILITY 2
- IL 2541 - PROGRAM DEVELOPMENT: ORIENTATION AND MOBILITY
- IL 2753 - ORIENTATION AND MOBILITY FOR DIVERSE POPULATIONS
- IL 2857 - LEVEL 3 INTERNSHIP PRACTICUM - ORIENTATION AND MOBILITY

**O&M Certification Curricula (Option 2)**

Required courses for O&M single certification for students who do not possess certification in a vision related field of study. This path (Option 2) also requires all the courses from Option 1 above, for a total of 32 credits.

All courses are 3 credits unless otherwise indicated.

- IL 2530 - INTRODUCTION TO THE EYE AND LOW VISION
- IL 2531 - EDUCATION OF CHILDREN WITH VI 1
- IL 2532 - EARLY INTERVENTION FOR CHILDREN WITH VI
- IL 2527 - LEVEL 1 OBSERVATIONAL PRACTICUM: VI
- IL 2540 - FOUNDATIONS OF ORIENTATION AND MOBILITY
- IL 2750 - TECHNIQUES OF ORIENTATION AND MOBILITY 1
- IL 2752 - TECHNIQUES OF ORIENTATION AND MOBILITY 2
- IL 2541 - PROGRAM DEVELOPMENT: ORIENTATION AND MOBILITY
- IL 2857 - LEVEL 3 INTERNSHIP PRACTICUM - ORIENTATION AND MOBILITY

**Vision Studies - Teacher of Students with Visual Impairments (TVI) Certificate**

In addition to 31 credits of online courses, students complete two levels of clinical practice. The first is an observational experience focused on TVI instruction. The second is a student teaching practicum, which is required for all initial or second-field certification applicants. Students apply for their PDE Instructional I teaching certificate upon successful completion of TVI coursework, student teaching practicum, and the required Praxis II exams.

**MEd Vision Studies Curriculum**

All courses are 3 credits, except where indicated.

- IL 2525 - TECHNOLOGY FOR CHILDREN WITH VI
Science, Technology, Engineering & Mathematics (STEM), EdD

EdD Curriculum

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.

The EdD curriculum is delivered in several stages, through a variety methods:

- **Orientation:** The EdD cohort participates in a full-day, on campus, orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.

- **One-week intensive on ramp:** The EdD cohort will participate in a full-week, on campus, experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

- **Hybrid seminars:** You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on campus sessions is required.

**SCHEDULE**

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<thead>
<tr>
<th>Year 1: Summer</th>
<th>Year 1: Fall</th>
<th>Year 1: Spring</th>
<th>Year 1: Summer</th>
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<tbody>
<tr>
<td>Foundation 1: Becoming a Leader Scholar Practitioner (3 credits) <strong>ON-RAMP</strong></td>
<td>Foundation 2: Leadership in Groups and Organizations (3 credits)</td>
<td>Foundation 3: Education Contexts (3 credits)</td>
<td>Foundation 4: Investigating Policy as a Lever for Change (3 credits)</td>
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<tr>
<td>Practitioner Inquiry 1 (3 credits)</td>
<td>ARCO: Course 1 (3 credits)</td>
<td>ARCO: Course 2 (3 credits)</td>
<td>Practitioner Inquiry 2 (3 credits)</td>
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<tr>
<th>Year 2: Fall</th>
<th>Year 2: Spring</th>
<th>Year 2: Summer</th>
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<tbody>
<tr>
<td>Supervised Practitioner Inquiry (3 credits)</td>
<td>Practitioner Inquiry 3 (3 credits)</td>
<td>Practitioner Inquiry 4 (3 credits)</td>
</tr>
<tr>
<td>ARCO: Course 3 (3 credits)</td>
<td>ARCO: Course 4 (3 credits)</td>
<td>Laboratory of Practice (3 credits)</td>
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<tr>
<th>Year 3: Fall</th>
<th>Year 3: Spring</th>
<th>Year 3: Summer</th>
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<tbody>
<tr>
<td>Guidance in Scholarly Practice</td>
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<td>Guidance in Scholarly Practice</td>
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</tbody>
</table>
CORE COURSES Credits / Units: 24 Total

Foundation Courses
- EDUC 3002 - FOUNDATIONS 1:
- EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS
- EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION
- EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE

Practitioner Inquiry Courses
- EDUC 3001 - PRACTITIONER INQUIRY 1
- EDUC 3006 - PRACTITIONER INQUIRY 2
- EDUC 3007 - PRACTITIONER INQUIRY 3
- EDUC 3008 - PRACTICUM INQUIRY 4

SUPERVISED PRACTITIONER INQUIRY
Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.
- EDUC 3009 - SUPERVISED PRACTITIONER INQUIRY

LABORATORY OF PRACTICE
Students will complete a Laboratory of Practice, a setting where theory and practice inform and enrich each other and facilitate transformative and generative learning that is measured by the development of scholarly expertise and implementation of practice (Carnegie Project on the Education Doctorate, 2010). Students choose from three types of experiences: job embedded, aspirant, or global.
- EDUC 3012 - SUPERVISED INTERNSHIP

GUIDANCE IN SCHOLARLY PRACTICE

Guidance in Scholarly Practice: Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.

Portfolio of Scholarly Practice: The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.
- EDUC 3099 - GUIDANCE IN DOCTORAL DEGREE

Science, Technology, Engineering & Mathematics (STEM) ARCO Curriculum

Science, Technology, Engineering & Mathematics (STEM) ARCO Courses
- LSAP 3096 - CURRICULUM ISSUES IN MATHEMATICS AND SCIENCE EDUCATION
- IL 3471 - INSTRUCTIONAL ISSUES IN MATH AND SCIENCES EDUCATIONS
- IL 3475 - PROFESSIONAL LEARNING IN MATH-SCIENCE EDUCATION
- IL 3476 - ASSESSMENT & EVAL IN MATH & SCIENCE EDUCATION

Department of Psychology in Education
Programs within the Department of Psychology in Education prepare graduates for professional careers in teaching, research, and professional practice. Doctoral studies are offered with areas of concentration in applied developmental psychology and in research methodology. Graduates receiving doctoral degrees serve in academic and research capacities in universities, government agencies, public and private research, and testing centers.

Master's degrees are offered with areas of concentration in applied developmental psychology and research methodology. Master's study in research methodology prepares personnel for positions in testing and research. Master's study in applied developmental psychology prepares students for professional roles as program administrators, directors, and supervisors, child development specialists, child and youth workers, child life specialists, behavior/developmental specialists, mobile therapists, and research associates.

The department offers the following degrees in psychology in education:

- Master of Arts (MA)
- Master of Science (MS)
- Master of Education (MEd)
- Doctor of Philosophy (PhD)

Program Information

Applied Developmental Psychology Program

Applied Developmental Psychology helps students gain the expertise for recognizing how the development, implementation, and evaluation of programs directly correspond with the progression of children, youth, and their families.

This program offers:

- Bachelor of Science (BS) degree
- Master's degree (MS)
- Doctoral degree (PhD)

Infant Mental Health Program

The program offers a Certificate and track within the MS in Applied Developmental Psychology program for students to gain specialized skills and knowledge for working with very young children (0 to 3-years of age) and their families. The training will be aligned with the recently purchased IMH Competency Guidelines and will prepare IMH students to be "ready" for IMH Endorsement through the process to be determined by the state of Pennsylvania. Students with IMH concentration and/or those who pursue IMH Endorsement will have unique qualifications that may improve employment opportunities and qualification to work in various settings. Among the unique skills students will learn are culturally-informed methods for infant observation, neurobehavioral assessment, transdisciplinary evaluation of infant development, promotion of caregiver-infant relationships, family engagement, relationship observation and assessment, system coordination, and an understanding of evidence-based interventions including Child Parent Psychotherapy, Circle of Security, Seeing is Believing, Healthy Families America, and more. Students will have unique learning opportunities with the continued collaboration between the concentration in IMH and various local agencies and offices.

Research Methodology Program

The Research Methodology Program prepares professionals in the areas of psychometrics and test design, and scholars who contribute to the study of the quantitative methods used in empirical studies. Graduate students of the research methodology program acquire skills in the interrelated areas of measurement, research design, and statistical methods. Graduates are prepared for positions in colleges, universities, research centers, testing agencies, school systems, ministries of education and other government agencies, and industry.

This program offers:

- Master of Education (MEd)
Applied Developmental Psychology, PhD

PhD Applied Developmental Psychology Curriculum

The PhD degree requires 90 credits distributed as follows: 27 credits in core developmental course work, 9 credits in professional practice course work, 18 credits in research methodology, and 9 credits in a supporting field of study. The program also requires two terms of supervised research, a research project, a practicum in college teaching, and a dissertation.

- PSY 2330 - DEVELM PSYCH: COGNITV DEVELOP
- PSY 2325 - DVLPMTL PSY: SOCIAL DEVELOPMENT
- PSYED 3190 - RES SEM IN PSYCHOLOGY IN EDUC
- PSYED 3417 - STRUCTURAL EQUATION MODELING
- PSYED 3450 - INTRO TO EDUCATIONAL EVALUATION
- PSYED 3591 - SUPERVISED RESEARCH IN APPLIED DEVELOPMENTAL PSYCHOLOGY
- PSYED 3592 - PRACTICUM IN COLLEGE TEACHING
- PSYED 3599 - DISSERTATION RESEARCH IN APPLIED DEVELOPMENTAL PSYCHOLOGY
- PSYED 2416 - APPLIED MULTIVARIATE ANALYSIS
- PSYED 3419 - MEANING-CENTERED APPROACHES TO STUDYING DEVELOPMENT: PARTICIPATION OBSERVATION IN THE FIELD
- PSYED 3632 - APPLIED RESEARCH DESIGN
- PSYED 2510 - ASSESSMENT OF CHILDREN'S DEVELOPMENT IN REAL WORLD CONTEXTS
- PSYED 2072 - EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT
- PSYED 2073 - CONSTR ACHIEV/ABILITY TESTS
- PSYED 3471 - CONSTRUCTING QUESTIONNAIRES AND CONDUCTING SURVEYS
- IL 3003 - RESEARCH INTERVIEWING
- EDUC 3595 - SPECIAL TOPICS - LSAP
- ADMPS 3012 - QUALITATIVE DATA MANAGEMENT ANALSYS AND PRESENTATION

Development in Context

12 Credits - Select at least 4 from the following (other options available with advisor consent):

- PSYED 3589 - SPECIAL TOPICS
- PSYED 3531 - FAMILY INFLUENCE ON CHILD DEVELOPMENT
- PSYED 3535 - CULTURE AND COGNITION
- PSYED 2588 - SPECIAL TOPICS
- EDUC 3595 - SPECIAL TOPICS - LSAP

Years 2-3

Select at least 4 from the following (any sequence):

- PSYED 3417 - STRUCTURAL EQUATION MODELING
• PSYED 3419 - MEANING-CENTERED APPROACHES TO STUDYING DEVELOPMENT: PARTICIPATION OBSERVATION IN THE FIELD
• PSYED 3450 - INTRO TO EDUCATIONAL EVALUATION
• PSYED 2416 - APPLIED MULTIVARIATE ANALYSIS
• ADMPS 3012 - QUALITATIVE DATA MANAGEMENT ANALYSIS AND PRESENTATION
• IL 3003 - RESEARCH INTERVIEWING
• LSAP 3595 - SPECIAL TOPICS

Area of Concentration

15 Credits

With your advisor, develop a coherent set of courses for your scholarly development.

Courses may be drawn from outside the School of Education or University of Pittsburgh.

Research, Teaching Practicum, and Dissertation Courses

All courses are 3 credits unless otherwise specified.

• PSYED 3591 - SUPERVISED RESEARCH IN APPLIED DEVELOPMENTAL PSYCHOLOGY
• PSYED 3592 - PRACTICUM IN COLLEGE TEACHING
• PSYED 3599 - DISSERTATION RESEARCH IN APPLIED DEVELOPMENTAL PSYCHOLOGY

PhD Core Curriculum

Methods Courses

Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the methods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a minimum of 5 methods courses: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

• EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
• EDUC 3103 - QUANTITATIVE METHODS 2
• EDUC 3104 - INTRODUCTION TO QUALITATIVE METHODS

First Year Seminar

To further support students' research competencies, PhD students also participate in a school wide first year seminar (EDUC 3102) and EDUC 3105). This seminar meets every other week (1 credit in fall and 2 credits in spring, taken over and above the typical 9 credit course load) and focuses on familiarizing students with practical and ethical issues in research (e.g., necessary clearances for working in schools, resolving questions of authorship and authorship order, human subjects guidelines), and supporting students work on their pre-dissertation proposal (e.g., developing innovative research questions, conducting a literature review).

• EDUC 3102 - FIRST YEAR SEMINAR 1
• EDUC 3105 - FIRST YEAR SEMINAR 2
Additionally, PhD students enroll in writing seminar courses taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

**Research Methodology, PhD**

**Doctor of Philosophy Degree**

Degree Requirements: The PhD degree requires a minimum of 90 credits and a dissertation.

*A redesigned Doctor of Philosophy degree starts Fall 2014. For additional degree information, refer to the introductory school section on Doctoral Degree.*

- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY
- PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS
- PSYED 2019 - STATISTICS 2: ANALYSIS OF VARIANCE
- PSYED 2030 - EXPERIMENTAL DESIGN
- PSYED 2072 - EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT
- PSYED 2073 - CONSTR ACHIEV/ABILITY TESTS
- PSYED 2410 - APPLIED REGRESSION ANALYSIS
- PSYED 2416 - APPLIED MULTIVARIATE ANALYSIS
- PSYED 2422 - DATA ANALYSIS USING COMPUTER PACKAGES
- PSYED 3408 - HIERARCHICAL LINEAR MODELING
- PSYED 3410 - REGRESSION ANALYSIS
- PSYED 3416 - MULTIVARIATE STATISTICS
- PSYED 3417 - STRUCTURAL EQUATION MODELING
- PSYED 3420 - COMPUTER APPLICATIONS TO RESEARCH METHODOLOGY
- PSYED 3471 - CONSTRUCTING QUESTIONNAIRES AND CONDUCTING SURVEYS
- PSYED 3475 - PSYCHOMETRIC THEORY
- PSYED 3477 - ITEM RESPONSE THEORY
- PSYED 3484 - ADV TOPICS IN MEASUREMENT
- PSYED 3491 - SUPERVISED RESEARCH IN RES METH
- PSYED 3495 - TEACHING INTERNSHIP IN RES METH
- PSYED 3499 - DISSERTATION RESEARCH IN RESEARCH METHODOLOGY

**PhD Core Curriculum**

**Methods Courses**

Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the methods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a **minimum of 5 methods courses**: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

- EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
- EDUC 3103 - QUANTITATIVE METHODS 2
- EDUC 3104 - INTRODUCTION TO QUALITATIVE METHODS

**First Year Seminar**
To further support students' research competencies, PhD students also participate in a school wide first year seminar (EDUC 3102 and EDUC 3105). This seminar meets every other week (1 credit in fall and 2 credits in spring, taken over and above the typical 9 credit course load) and focuses on familiarizing students with practical and ethical issues in research (e.g., necessary clearances for working in schools, resolving questions of authorship and authorship order, human subjects guidelines), and supporting students work on their pre-dissertation proposal (e.g., developing innovative research questions, conducting a literature review).

- EDUC 3102 - FIRST YEAR SEMINAR 1
- EDUC 3105 - FIRST YEAR SEMINAR 2

Additionally, PhD students enroll in writing seminar courses taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

**Applied Developmental Psychology, MS**

The Master of Science degree requires 36 credits distributed as follows: Applied Developmental Psychology (ADP) Core courses (18 credits), Specialization courses (12 credits), and Community-Based Practice Learning (with capstone project) courses (6 credits).

**Core Courses**

All full-time students in the 36-credit Master of Science (MS) program in Applied Developmental Psychology (ADP) complete a common set (18 credits) of core, foundational courses in their first year.

- PSYED 2503 - DEVELOPMENT: CONCEPTION THROUGH EARLY CHILDHOOD
- PSYED 2504 - DVLP: MIDDLE CHLHD/ADOLESCENCE
- PSYED 2510 - ASSESSMENT OF CHILDREN'S DEVELOPMENT IN REAL WORLD CONTEXTS
- PSYED 2530 - APPLIED DEVELOPMENTAL PSYCHOLOGY (ADP): PROFESSIONAL IDENTITY AND LEADERSHIP
- PSYED 2542 - EVIDENCE-BASED INTERVENTIONS IN REAL WORLD CONTEXTS 1
- PSYED 2543 - EVIDENCE-BASED INTERVENTIONS IN REAL WORLD CONTEXTS 2

**Specialization Courses**

(Other courses may be chosen based on specialization with advisor approval)

Choose 18.0 credits from the following courses:

In the second year of the program, students complete in-depth study and training in courses aligned with their chosen concentration/specialization area, as well as complete a community-based practice learning experience that consists of a field placement and development of the Master's capstone project. ADP MS students presently may select from five concentrations; ARMO, BHSC, CHSCN, CYD, and IMH, or, they may design their own course of study with advisor approval. See typical course offering by concentration below. ADP MS options include completion of the Applied Behavior Analysis Certificate, Study Abroad, and taking additional elective courses. View Course Options

- PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS
- PSYED 2113 - DEVELOPMENTAL PSYCHOPATHOLOGY
- PSYED 2141 - CHILD AND YOUTH WORK 1 - INTRODUCTION
- IL 2505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS
- PSYED 2632 - APPLIED RESEARCH DESIGN
- PSYED 2532 - PSYCHOSOCIAL ASPECTS OF ILLNESS
- PSYED 2520 - INTRODUCTION TO COUNSELING
- PSYED 2521 - THEORY, MEANING AND PRACTICE OF PLAY AND ACTIVITY
- PSYED 2349 - CHILD LIFE PRACTICE IN HOSPITALS
- PSYED 2524 - BEHAVIORAL ASSESSMENT AND INTERVENTION
- PSYED 2003 - REFLECTIVE CONSULTATION
Research Methodology, MA

The Master of Education degree requires 39 credits of coursework and a research project.

Core Curriculum

- PSYED 2001 - INTRO TO RESEARCH METHODOLOGY
- PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS
- PSYED 2019 - STATISTICS 2: ANALYSIS OF VARIANCE
- PSYED 2030 - EXPERIMENTAL DESIGN
- PSYED 2072 - EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT
- PSYED 2073 - CONSTR ACHIEV/ABILITY TESTS

Additional Research Methods Courses

Choose 9.0 credits from the following 4 courses

- PSYED 2422 - DATA ANALYSIS USING COMPUTER PACKAGES
- PSYED 2410 - APPLIED REGRESSION ANALYSIS
- PSYED 2416 - APPLIED MULTIVARIATE ANALYSIS
- PSYED 3471 - CONSTRUCTING QUESTIONNAIRES AND CONDUCTING SURVEYS

Psychological Perspectives on Education

Choose 3.0 credits from the following courses

- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/adolescence
- PSYED 2127 - HUMAN LEARNING
- PSYED 2503 - DEVELOPMENT: CONCEPTION THROUGH EARLY CHILDHOOD
- PSYED 2504 - DVLP: MIDDLE CHLHD/adolescence

Social and Cultural Perspectives on Education

Choose 3.0 credits from the following courses

- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2307 - POLITICS AND HISTORY OF HIGHER EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
Research Requirements

Choose 6.0 credits from the following 3 courses

- Option 1: Thesis - 6 total credits of PSYED 2499 over 2 terms;
- Option 2: Supervised Research Project Thesis Equivalent - 3 credits of PSYED 2491 and 3 credits of PSYED 2494;
- Option 3: Supervised Research Project and Literature Review - 3 credits of PSYED 2491 and 3 credits of 2494

- PSYED 2491 - SUPERVISED RESEARCH IN RES METH
- PSYED 2494 - M.A. PROJECT IN RSRCH METHODLGY
- PSYED 2499 - THESIS RES IN RSRCH METHODOLOGY

Master's Comprehensive Examination

Master's Comprehensive Examination consists of three 100-item multiple-choice tests, one each in the areas of measurement, research design, and statistics.

For the Master's Comprehensive Examination, a student must attain a score of 60 on each of the three area tests. The students must take each of the three area tests until a score of 60 is attained. Before retaking a test, however, the advisor and the students should make plans for removal of any knowledge deficiency identified from the results of the previous administration. The advisor's approval for retaking any part of the examination should be obtained. There is no limit on the number of times a master's student may take the comprehensive examination in order to obtain a passing score at the master's level. Students cannot retake an examination for at least a month unless the advisor agrees.

Research Methodology, MEd

Core Curriculum

Degree Requirements: The MA degree requires 39 credits of coursework and completion of a thesis option.

- PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS
- PSYED 2019 - STATISTICS 2: ANALYSIS OF VARIANCE
The student participates in a supervised research activity that involves data collection. Usually, students register for three credits of PSYED 2491 in each of two terms. A report that describes the activities completed each term is written by the student. The written report prepared for the supervised research experience does not satisfy the pre-dissertation research project requirement in the doctoral program.

Additional Research Methods Courses

Choose 9.0 credits from the following 4 courses

Other courses may be approved by the student's advisor.

- PSYED 2410 - APPLIED REGRESSION ANALYSIS
- PSYED 2416 - APPLIED MULTIVARIATE ANALYSIS
- PSYED 3471 - CONSTRUCTING QUESTIONNAIRES AND CONDUCTING SURVEYS
- PSYED 2422 - DATA ANALYSIS USING COMPUTER PACKAGES

Psychological Perspectives on Education

Choose 3.0 credits from the following courses.

- EDUC 2007 - HUMAN LEARNING
- EDUC 2008 - CONCEPTION TO EARLY CHILDHOOD
- EDUC 2009 - DEVELOPMENT: MIDDLE CHILDHOOD/adolescence
- PSYED 2504 - DvLP: MIDDLE CHILHD/adoLESCENCE
- PSYED 2503 - DEVELOPMENT: CONCEPTION THROUGH EARLY CHILDHOOD
- PSYED 2127 - HUMAN LEARNING

Social and Cultural Perspectives on Education

Choose 3 credits from the following courses.

- ADMPS 2050 - RACE AND RACISM IN EDUCATION AND SOCIETY
- ADMPS 2133 - GENDER AND EDUCATION
- ADMPS 2302 - STATE/NATIONAL POLITICS OF EDUCATION
- ADMPS 2305 - SOCIOLOGY OF EDUCATION
- ADMPS 2306 - HISTORY OF EDUCATION
- ADMPS 2307 - POLITICS AND HISTORY OF HIGHER EDUCATION
- ADMPS 2310 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- ADMPS 2342 - EDUCATION AND CULTURE
- ADMPS 2344 - LEADERSHIP IN SERVICE LEARNING
- ADMPS 2352 - ANTHROPOLOGY OF EDUCATION
- EDUC 2111 - CONTEMPORARY PHILOSOPHY OF EDUCATION
- EDUC 2112 - POLITICS AND HISTORY OF HIGHER EDUCATION
- EDUC 2102 - HISTORY OF EDUCATION
- EDUC 2103 - RACE AND RACISM IN EDUCATION AND SOCIETY
- EDUC 2104 - LEADERSHIP IN SERVICE LEARNING
Master's Comprehensive Examination

Master's Comprehensive Examination consists of three 100-item multiple-choice tests, one each in the areas of measurement, research design, and statistics.

For the Master's Comprehensive Examination, a student must attain a score of 60 on each of the three area tests. The students must take each of the three area tests until a score of 60 is attained. Before retaking a test, however, the advisor and the students should make plans for removal of any knowledge deficiency identified from the results of the previous administration. The advisor's approval for retaking any part of the examination should be obtained. There is no limit on the number of times a master's student may take the comprehensive examination in order to obtain a passing score at the master's level. Students cannot retake an examination for at least a month unless the advisor agrees.

Quantitative Research Methodology Minor

Requirements

A minor in Quantitative Research Methodology is awarded to students who successfully complete a minimum of 18 credits in intermediate and advanced quantitative research methodology course work in the Department of Psychology in Education with a minimum grade point average of 3.25.

The course work must be distributed as follows:

- A minimum of 6 credits in statistical methods.
- A minimum of 3 credits in measurement.
- A minimum of 3 credits in research design.

Statistical Methods Courses

Minimum of 6 credits chosen from:

- PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS
- EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
- PSYED 2019 - STATISTICS 2: ANALYSIS OF VARIANCE
- PSYED 2410 - APPLIED REGRESSION ANALYSIS
- EDUC 3103 - QUANTITATIVE METHODS 2

Measurements Courses

Minimum of 3 credits chosen from:
Research Design Courses

Required course - 3 credits:

- PSYED 2030 - EXPERIMENTAL DESIGN

Infant Mental Health Certificate

Description of the Course Requirements:

All students must complete 18 course credits for this School of Education Post-Baccalaureate Certificate in Infant Mental Health within the Department of Applied Developmental Psychology. Students may complete two optional credits in Reflective Supervision/Consultation to meet requirements for IMH Endorsement.

All courses are 3 credits unless otherwise specified.

- PSYED 2003 - REFLECTIVE CONSULTATION
- PSYED 2005 - INFANT DEVELOPMENT
- PSYED 2006 - INFANT MENTAL HEALTH INTERVENTIONS I
- PSYED 2007 - FOUNDATIONS OF INFANT MENTAL HEALTH I
- PSYED 2008 - FOUNDATIONS OF INFANT MENTAL HEALTH II
- PSYED 2009 - INFANT MENTAL HEALTH INTERVENTIONS II

Learning Sciences and Policy Program

The Learning Sciences and Policy program is based on the belief that understanding learning, teaching, and organizations is best undertaken as an interactive system, and that an integrated and coordinated interdisciplinary approach is best suited to understand, design and implement educational change. The program combines disciplines in learning sciences, teaching in the content disciplines, and organization and policy studies with the goal of improving instruction at scale, and is predicated on the idea that successful policy solutions will require learning on the part of educational professionals at all levels of the system.

- Learning Science and Policy (LSAP) PhD

The Learning Sciences and Policy (LSAP) PhD program brings three groups of faculty expertise together into a collaborative research and training environment: learning sciences in education; content-based educational research; and education policy and organizational change. The goal for the new program is to produce a yearly cohort of 5 to 8 nationally-competitive research scholars who have the training, track-record, and vision to become leaders in understanding and promoting educational change.

Our program is based on the belief that understanding learning, teaching, and organizations is best undertaken as an interactive system, and that an integrated and coordinated interdisciplinary approach is best suited to understand, design, and implement educational change. The program combines disciplines in learning sciences, teaching in the content disciplines, and organization and policy studies with the goal of improving instruction at scale, and is predicated on the idea that successful policy solutions will require learning on the part of educational professionals at all levels of the system.

Innovative features of the LSAP PhD Program:

- Students will be immersed in rigorous interdisciplinary research and training experiences from their first day in the program.
• The University of Pittsburgh Learning Policy Center will serve as a vehicle for dissemination of LSAP faculty and student research as well as a location for policy internships.

• Access to Pittsburgh's rich talent pool of analysts and research in education policy and learning including research scientists at Learning Research and Development Center (LRDC), policy specialists at the RAND Corporation, research methodologists at Carnegie Mellon, and education reform specialists at the Institute for Learning.

• Admitted students will be guaranteed full funding (for three years) through research assistantships that will allow them to work alongside active researchers on funded research programs.

• Students will participate in a year of field placement or a semester of field placement and a semester of teaching practicum at the college level. Field placements provide experiences outside the university (e.g., museums, school districts, community centers, and research centers).

• Policy and design internships with projects including the Institute for Learning, the Learning Policy Center, University of Pittsburgh's Center for Out-of-School Learning Environments (UPCLOSE), Pittsburgh Science of Learning Center (PSLC), SWoRD, the Design-based Learning Project.

• Active involvement in ongoing research projects.

• Integrated coursework that covers the fields of Learning Sciences, Learning Policy and Organizations, and Content Area Learning.

• Rigorous training in quantitative, qualitative, and mixed research methods.

• Out-of-School Learning EdD

The EdD Area of Concentration (ARCO) in Out-of-School Learning is intended for experienced professionals who aspire to be transformational leaders in out-of-school learning. Prospective applicants might currently work in museums, out-of-school time (OST) settings, libraries, digital media/technology, university outreach/extension, policy groups and think tanks, life-long learning programs, parks, environmental centers, arts-based organizations, community settings, youth development, or the many other areas where we explore learning environments that exist outside of classrooms. Program faculty are expert in connecting research and practice and have experience across a wide range of out-of-school settings, audiences, and learning arrangements.

Out-of-School Learning students are part of a larger, multidisciplinary EdD cohort of students from eight different specializations in education, offering rich opportunities for collaboration and broad learning about education. The core EdD curriculum covers educational foundations and methods of practitioner inquiry, while the specialized out-of-school learning curriculum focuses on informal learning theory, organizational processes, applied life-long learning, and evidence-based change and evaluation.

In addition to online work, most students in the EdD program come to Pittsburgh for occasional Saturday sessions with the entire EdD cohort. Students in the out-of-school learning program can opt for this online/face-to-face model or could choose a predominately online model. Students who do not live in Pennsylvania can apply for merit-based scholarships to help offset the cost of out-of-state tuition.

Contact Information

Program Chair, Kevin Crowley
Learning Sciences and Policy
LRDC 827
E-mail: crowleyk@pitt.edu
Phone: 412-624-7677
Fax: 412-624-7439

Learning Sciences and Policy, PhD

Degree Requirements

Doctoral students in the Learning Sciences and Policy program who enter the program without a master's degree in a relevant field are required to take six core courses, a minimum of six research methods courses, and eight advanced seminars in an area of specialization. Students also participate as part of a faculty member's research team throughout their time in the program. As part of that research team, students engage in every phase of the research process, apprenticing under the active mentoring of the faculty member. Additionally, doctoral students are expected complete at least two independent research projects under the supervision of the faculty. Students are required to take two one-semester practica/internships, the purposes
of which are to expose students to a range of kinds and forms of research and build students' professional skills. Students with a Masters degree in a related field can transfer credits toward the PhD with approval by the LSAP faculty.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Classes</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Core Courses</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>- Learning Sciences</td>
<td>1</td>
<td></td>
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<tr>
<td>- Education Policy</td>
<td>1</td>
<td></td>
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<tr>
<td>- Organizational Perspectives on Educational Improvement</td>
<td>1</td>
<td></td>
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<tr>
<td>- Design</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>- First Year Seminar (EDUC 3102 and 3105)(^1)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>- Writing Seminar(^2)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>B. Research Methods</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>- Required coursework in year 1 includes Quantitative 1 (EDUC 3100) and 2 (EDUC 3103); Qualitative 1 (EDUC 3104)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>C. Advanced Seminars/Directed Studies in Area of Specialization(^3)</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>- Supervised Research</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>D. Internship</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>E. Doctoral Dissertation Research</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>

\(^1\) First Year Seminar meets every other week, with 1 credit in fall and 2 credits in spring, taken over and above the typical 9-credits course load. These credits are above and beyond the 90 credits required for graduation.

\(^2\) Writing Seminar taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

\(^3\) This includes courses taken outside the School of Education.

- LSAP 3095 - ORGANIZATIONAL PERSPECTIVES ON EDUCATIONAL IMPROVEMENT
- LSAP 3096 - CURRICULUM ISSUES IN MATHEMATICS AND SCIENCE EDUCATION
- LSAP 3097 - SUPERVISED RESEARCH
- LSAP 3098 - DIRECTED STUDIES - LSAP
- LSAP 3099 - DOCTORAL DISSERTATION RESEARCH IN LSAP
- LSAP 3540 - DESIGN OF EDUCATIONAL SYSTEMS
- LSAP 3595 - SPECIAL TOPICS

**PhD Core Curriculum**
Methods Courses

Preparing students to tackle problems of practice and policy, and create innovative research agendas, requires intentionality in the methods coursework that supports students' development of independent projects, meaningful contributions to advisors' research, and critical analysis of past research. To help ensure that students develop the necessary analytic competencies, students across the areas of concentration (ARCOs) for the PhD in the School of Education are required to complete a minimum of 5 methods courses: Quantitative 1 (EDUC 2100) and 2 (EDUC 3100); Qualitative 1 (EDUC 3104); and 2 seminars in advanced quantitative or qualitative methods, determined by the student and their advisor.

- EDUC 3100 - INTRODUCTION TO QUAN METHODS: DESCRIPTIVE AND INFERENTIAL STATISTICS
- EDUC 3103 - QUANTITATIVE METHODS 2
- EDUC 3104 - INTRODUCTION TO QUALITATIVE METHODS

First Year Seminar

To further support students' research competencies, PhD students also participate in a school wide first year seminar (EDUC 3102) and EDUC 3105). This seminar meets every other week (1 credit in fall and 2 credits in spring, taken over and above the typical 9 credit course load) and focuses on familiarizing students with practical and ethical issues in research (e.g., necessary clearances for working in schools, resolving questions of authorship and authorship order, human subjects guidelines), and supporting students work on their pre-dissertation proposal (e.g., developing innovative research questions, conducting a literature review).

- EDUC 3102 - FIRST YEAR SEMINAR 1
- EDUC 3105 - FIRST YEAR SEMINAR 2

Additionally, PhD students enroll in writing seminar courses taken over and above the typical 9-credit course load beginning in the second year of study. These credits are above and beyond the 90 credits required for graduation.

Out-of-School Learning, EdD

EdD Curriculum

The EdD program is a three-year 90-credit program, including 30 credits transferred from relevant graduate work. Students are required to transfer 30 credits of graduate work into the EdD program.

The EdD curriculum is delivered in several stages, through a variety methods:

- **Orientation:** The EdD cohort participates in a full-day, on campus, orientation in the spring before the summer start of the program. The day includes a welcome from the Dean of the School of Education, EdD program information, and cohort-building activities as well as an introductory session with other students in your Area of Concentration. Orientation typically takes place in April.

- **One-week intensive on ramp:** The EdD cohort will participate in a full-week, on campus, experience that includes intense work focused on understanding enduring problems of practice in education, health, and human development. This one-week experience, known as the "on-ramp", will be your first foundations course on framing, identifying, and investigating problems of practice. The on-ramp typically takes place in June.

- **Hybrid seminars:** You will experience a hybrid model of education through online course experiences and in-person, once per month (typically on Saturdays) sessions on the Pittsburgh campus. Attendance at in-person, on campus sessions is required.

SCHEDULE

<table>
<thead>
<tr>
<th>Year 1: Summer</th>
<th>Year 1: Fall</th>
<th>Year 1: Spring</th>
<th>Year 1: Summer</th>
</tr>
</thead>
</table>
| Foundation 1: Becoming a Leader Scholar Practitioner (3 credits)
*ON-RAMP* | Foundation 2: Leadership in Groups and Organizations (3 credits) | Foundation 3: Education Contexts (3 credits) | Foundation 4: Investigating Policy as a Lever for Change (3 credits) |
| ARCO: Course 1 | ARCO: Course 2 | | Practitioner Inquiry 2 |

523
Practitioner Inquiry 1 (3 credits)  |  (3 credits)  |  (3 credits)  |  (3 credits)

<table>
<thead>
<tr>
<th>Year 2: Fall</th>
<th>Year 2: Spring</th>
<th>Year 2: Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervised Practitioner Inquiry (3 credits)</td>
<td>Practitioner Inquiry 3 (3 credits)</td>
<td>Practitioner Inquiry 4 (3 credits)</td>
</tr>
<tr>
<td>ARCO: Course 3 (3 credits)</td>
<td>ARCO: Course 4 (3 credits)</td>
<td>Laboratory of Practice (3 credits)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3: Fall</th>
<th>Year 3: Spring</th>
<th>Year 3: Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance in Scholarly Practice (6 credits)</td>
<td>Guidance in Scholarly Practice (6 credits)</td>
<td>Guidance in Scholarly Practice (6 credits)</td>
</tr>
</tbody>
</table>

**CORE COURSES** Credits / Units: 24 Total

**Foundation Courses**
- EDUC 3002 - FOUNDATIONS 1:
- EDUC 3003 - FOUNDATIONS 2: LEADERSHIP IN GROUPS AND ORGANIZATIONS
- EDUC 3004 - FOUNDATIONS 3: CONTEXTS OF EDUCATION
- EDUC 3005 - FOUNDATIONS 4: POLICY AS A LEVER FOR CHANGE

**Practitioner Inquiry Courses**
- EDUC 3001 - PRACTITIONER INQUIRY 1
- EDUC 3006 - PRACTITIONER INQUIRY 2
- EDUC 3007 - PRACTITIONER INQUIRY 3
- EDUC 3008 - PRACTICUM INQUIRY 4

**SUPERVISED PRACTITIONER INQUIRY**
Students will identify, review and synthesize relevant scholarship that supports as inquiry into a problem of practice.
- EDUC 3009 - SUPERVISED PRACTITIONER INQUIRY

**LABORATORY OF PRACTICE**
Students will complete a Laboratory of Practice, a setting where theory and practice inform and enrich each other and facilitate transformative and generative learning that is measured by the development of scholarly expertise and implementation of practice (Carnegie Project on the Education Doctorate, 2010). Students choose from three types of experiences: job embedded, aspirant, or global.
- EDUC 3012 - SUPERVISED INTERNSHIP

**GUIDANCE IN SCHOLARLY PRACTICE**

**Guidance in Scholarly Practice:** Based on research interests, the students will be required to write a manuscript that reports on the improvement science process.

**Portfolio of Scholarly Practice:** The portfolio of scholarly practice will provide evidence of learning and success in foundations, inquiry, and ARCO experiences.
- EDUC 3099 - GUIDANCE IN DOCTORAL DEGREE

Out-of-School Learning ARCO Curriculum
Out-of-School Learning ARCO Courses

- LSAP 3015 - INFORMAL LEARNING: THEORY AND FOUNDATION
- Evaluation Assessing Impact and Evidence for Decision Making
- The Future of Out-of-School Learning
- Lifelong Learning for Diverse Audiences
John A. Swanson School of Engineering

Graduate study in engineering at the Swanson School is designed for those professionals who wish to further develop the ability to apply engineering principles to the solution of modern society's problems. The programs are flexible and can be used by those interested in research, design, management, and related technical positions in both the public and private sectors. PhD programs are also designed for those individuals interested in an academic or research career.

The Swanson School of Engineering offers graduate education leading to the Master of Science degree in bioengineering, chemical engineering, computer engineering, civil engineering, electrical engineering, industrial engineering, materials science and engineering, mechanical engineering, petroleum engineering, and sustainable engineering. Swanson School of Engineering MS degree programs have two tracks: a professional track and a research track. The school offers PhD degrees in chemical engineering, civil engineering, computer engineering, electrical engineering, industrial engineering, materials science and engineering, and mechanical engineering as well as computational modeling and simulation. Also offered is a MD/PhD Program with the School of Medicine and several certificate programs.

Contact Information

The Swanson School of Engineering is housed in the Michael L. Benedum Hall of Engineering. Inquiries and correspondence concerning graduate study should be addressed to the graduate coordinator of the appropriate department or program. Inquiries of a general nature can be sent to:

University of Pittsburgh
Associate Dean for Academic Affairs
152 Benedum Engineering Hall
Swanson School of Engineering

Admissions

All applicants will be judged on their own merits. For recent graduates of an ABET-accredited program, admission will be based primarily on the undergraduate academic record. Typically a B average (cumulative grade point average of 3.0 on a 4.0 scale) or better is required for admission, and most programs require the Graduate Record Examination (GRE). Applicants should check each program's specific requirements.

Applicants from non-ABET accredited programs also are considered on an individual basis with emphasis given to academic achievement, area of study, career orientation, and work experience. Depending on the program, applicants who do not have an engineering degree may have to take certain prerequisite courses before beginning their graduate engineering degree program. Applicants may be admitted provisionally until specified prerequisites are completed and/or a 3.000 grade point average is achieved. Undergraduate courses cannot be used to satisfy graduate degree requirements.

Graduate Special Student - A student not currently enrolled at the University of Pittsburgh will be granted temporary admission typically only for one term but at most for a total of six credits. Students in this classification cannot earn credits toward the completion of degree requirements at the University of Pittsburgh with the following exception: Students who are unable to meet the deadline for filing an official application for admission may be granted temporary admission status by the appropriate graduate coordinator. Regular admission must be granted within the first term of registration as a Special Student. Graduate credits earned during temporary admission period can be applied toward the degree. Approval from the appropriate graduate coordinator is required.

Admissions Procedures

1. U.S. citizens or permanent residents should:
1. See the Swanson School of Engineering Web site for the online application, or contact a departmental graduate coordinator for the application material.

2. Apply online or return the completed application material with a check or money order for $40 payable to the University of Pittsburgh. This application fee is not refundable.

3. Ask the registrars of all undergraduate and graduate schools attended to send transcripts of records to the University of Pittsburgh; Swanson School of Engineering Office of Administration; 151 Benedum Engineering Hall; Pittsburgh, PA 15261. An official transcript of the undergraduate record is required unless the applicant is a graduate of the University of Pittsburgh.

Once all application material, including the application fee and complete transcripts, are received, the application will be reviewed. The deadline for the fall term is March 1; the spring term deadline is July 1; and the summer term deadline is February 1. All applications for financial assistance should be received by February 1 for admission the following fall term.

Please see Graduate Admissions of International Students in the front section of this bulletin for University regulations on admissions of international students.

2. International Students: In addition to academic review by the Swanson School of Engineering, the admissions officer, Office of International Services (OIS) will also process international student applications for non-academic qualifications. The document needed to apply for a non-immigrant visa will be issued only after the applicant has been admitted and has provided evidence of adequate financial support and English language proficiency. The procedure for international applicants is as follows:

1. Preliminary inquiries concerning graduate programs, research, and financial aid may be directed to the departmental graduate coordinator. Applications for graduate study are available from www.engineering.pitt.edu, the graduate coordinator, or the University of Pittsburgh, Swanson School of Engineering, Office of Administration, 151 Benedum Hall, Pittsburgh, PA 15261. The non-refundable application fee for international students is $50.

2. Following review (and acceptance) by the department based upon the applicant's academic qualifications, the international student admissions officer will review the applicant's financial and language qualifications to determine eligibility for a visa document.

3. Prior to completion of registration, entering engineering graduate students with TOEFL scores of less than 100 on the iBT (or equivalent) must take an additional test of English language proficiency administered by the English Language Institute (ELI). International students who are citizens of countries where English is the official language, international students who have completed degrees at regionally accredited institutions in the U.S., and international students who have results on the TOEFL above 100 on the iBT (or equivalent) may be exempted from taking the additional test of English language proficiency by the student's academic department.

This procedure applies also to international applicants who are already in the United States.

The University reserves the right, even after the arrival and enrollment of a student from another country, to require, at the student's expense, individual curricular adjustments whenever particular deficiencies or needs are found. This may include enrollment without credit in English as a Foreign Language or other prerequisite courses. New international students are encouraged to use the services of OIS for help in adjusting to the United States and to facilitate their total educational experience.

Financial Aid

The Swanson School of Engineering provides a considerable amount of financial assistance to highly qualified, full-time graduate students. Applicants interested in being considered for financial assistance including teaching and research assistantships must also complete a graduate assistantship application available at http://www.engineering.pitt.edu/graduate and should check with the department of their choice for any additional information concerning applications for assistantships. All applications for financial assistance should be received by February 1 for admission the following fall term.

Financial aid includes:

1. Fellowships awarded to students of outstanding ability, usually as an unrestricted grant.

2. Traineeships awarded to students for training in selected areas.

3. Teaching assistantships and teaching fellowships awarded to exceptionally well-prepared students in return for assistance in laboratories, recitation sections, and other instructional duties. Partial to full tuition scholarships are provided with these assistantships.

4. Research assistantships awarded to students for assistance on research programs. Partial to full tuition scholarships are provided as part of the assistantship.

Advisors
Three types of advisors are primarily responsible for guiding engineering students through their program:

**Graduate Coordinator**

The graduate coordinator is the faculty member responsible for the operation of the department's graduate program. The coordinator supervises the operations of admissions, registration, course scheduling, assignment of advisors, graduation, and academic disciplinary procedures. The graduate coordinator generally is the best source of information and advice when questions arise or problems are encountered during graduate study.

**Faculty Advisor**

Each student is assigned a faculty advisor when admitted into a graduate program. This advisor assists the student in planning a course of study and is responsible for approving the student's registration and all course changes. Once the student begins thesis or dissertation research, the duties of the faculty advisor are assumed by the student's major research advisor.

**Major Research Advisor(s)**

The major research advisor (or advisors if joint advisors are designated) is the graduate faculty member who directs the student's research and supervises the preparation of the thesis or dissertation. Generally, the major advisor also serves as the chair of the final oral examination (defense) committee for the student's thesis or dissertation.

**Responsibility for Academic Progress**

It is the responsibility of students to check their academic progress by contacting either the departmental graduate coordinator or their faculty advisor. The student should also become familiar with the program degree requirements and pertinent academic regulations.

**Academic Integrity and Code of Conduct**

The integrity of the academic process requires fair and impartial evaluation on the part of faculty and honest academic conduct on the part of students. Students are expected to conduct themselves with a high level of responsibility in the fulfillment of their course of study and their conduct in and out of the classroom. It is the corresponding responsibility of faculty to make clear to students those standards by which they will be evaluated and the resources permissible for use by students during their course of study. The educational process is perceived as a joint faculty-student enterprise that will involve professional judgment by faculty and may involve, without penalty, reasoned exception by students to the data or views offered by faculty. Consistent with these considerations (and without limiting their scope and application in their entirety to the academic programs of the University), faculty and students are directed to observe established University of Pittsburgh and Swanson School of Engineering guidelines on academic integrity and code of conduct. The Swanson School of Engineering and the University of Pittsburgh Guidelines on Academic Integrity are available to faculty and students in the departmental offices of the Swanson School of Engineering and is also available by Policy Guidelines - SSOE. The University's student Code of Conduct is available at: http://www.studentaffairs.pitt.edu/wp-content/uploads/2016/11/2016_Code_of_Conduct_Nov4.pdf

**Probation, Suspension and Dismissal**

A graduate student whose cumulative GPA falls below 3.000 will be placed on academic probation for the following term. If the student's cumulative GPA remains below 3.000 for the next academic year term (i.e., the cumulative GPA is below 3.000 for two successive academic year terms), he or she can be suspended or dismissed. Students will normally be suspended for one calendar year; students who are dismissed will not be re-admitted to the Swanson School of Engineering. Students on probation are not eligible to take the PhD preliminary evaluation or the MS or PhD comprehensive examination, and will not be graduated.
Course Work for Graduate Credit

Only graduate courses will count for graduate credit (i.e., 2000 or 3000 level courses). Students may not use undergraduate courses taken at either the University of Pittsburgh, or another university to satisfy a graduate requirement.

Online courses:

Unless the student is specifically enrolled in one of the Swanson School's online degree programs, no more than two online courses (six credits total) may be taken for graduate credit. These course must be:

1. Offered by an appropriate academic graduate program.
2. Suitable for the student's academic program and typically not available on the University of Pittsburgh campus
3. Approved by the graduate coordinator and then approved by the Associate Dean for Academic Affairs.

Residency and Statute of Limitations Requirements

A graduate student may complete all requirements for the MS degree on a part-time basis. All degree requirements for the Research MS degree, must be fulfilled within a period of four calendar years after the student's first registration for graduate study; within five calendar years for a Professional MS degree.

Master of Science Programs

All departments in the Swanson School of Engineering offer MS degree programs that have two tracks: a professional track and a research track. The differences are detailed below. Students may transfer no more than six credits of appropriate graduate course work from another graduate program at the discretion of the graduate coordinator in satisfying the course requirements of both the professional and research MS degrees.

Professional MS Track

The professional track consists of 30 credits (10 courses). The faculty of the degree-granting unit determines the actual course content and requirements. These programs typically have a set of required core courses. Students may have an opportunity for more in-depth study in a particular area of interest through a two- or three-course concentration. As a professional degree, while no thesis or comprehensive examination is required, the department may require a special projects course.

The professional MS programs are oriented toward full-time students seeking a career in industry, and part-time students currently working in industry. Certain programs may be offered off campus at industrial sites or online. Although students who have an undergraduate degree in a technical area (e.g., mathematics, physics, computer science, or chemistry) may be accepted, depending on the particular program, they may be required to take certain prerequisite courses. These undergraduate pre-requisite courses cannot be used to satisfy graduate course requirements. Interested students should contact the appropriate graduate coordinator for specific details.

Research MS Track

The research track is primarily for those students who wish to pursue the PhD. Students in this track will be advised to take courses best suited for a research degree. The MS research track requires a minimum of 24 course credits, depending on the selected option and six credits of thesis research. The department may also specify credit distribution requirements for courses in the major and related areas. The student should see his or her major advisor for detailed information. Students working under the MS research option are required to present a thesis that demonstrates marked attainment in some area of the student's major subject, as well as acquisition of the methods and techniques of scientific investigation. Certain programs may permit a project to be completed in place of the thesis. The University transcript will include an entry indicating that the student is in the research MS
track. A comprehensive examination or equivalent is required. Normally the final oral exam for the thesis meets the requirements of the MS comprehensive exam.

A graduate student may commence MS thesis work only after obtaining full graduate status.

A graduate student should initiate preliminary thesis and research work as early as possible. Once research and thesis work has begun, the student must register for thesis credits of research in each succeeding term until successful completion of the thesis and the final oral examination. Exceptions to this rule can be made only upon the recommendation of the student's major advisor.

Only six credits of MS thesis may be used as partial fulfillment of the requirements for the MS degree. Before completion of the thesis, the student will receive a grade of I (incomplete) at the end of each term. After successful completion of the thesis and the final oral examination, all I grades will be changed to S grades.

**MS Thesis Oral Examination (Defense)**

The purpose of this examination is to evaluate the student's MS thesis and is part of the MS thesis requirements as specified by the program. For additional information on the thesis exam, see Thesis Option under Regulations Pertaining to Master of Arts and Master of Science Degrees.

**Residency and Statute of Limitations Requirements**

A graduate student may complete all requirements for the MS degree on a part-time basis. All degree requirements for the MS degree, however, must be fulfilled within a period of four calendar years after the student's first registration for graduate study.

**Electronic Thesis and Dissertation (ETD)**

http://www.pitt.edu/~graduate/dissertation.html

All graduate students preparing a thesis or dissertation must complete an Electronic Thesis and Dissertation participation form. The signed participation form and the necessary payment receipt documentation are to be submitted to the Swanson School of Engineering Office of Administration. After receiving approval the student will go to the ETD Online System and follow the instructions in the Format Guidelines Manual for submission of an ETD. Questions and problems can be addressed by contacting the School of Engineering Office of Administration, 151 Benedum Hall.

**Joint MD/PhD Degree Program/Medical Scientist Training Program**

The Medical Scientist Training Program (MD/PhD) offers selected students an opportunity to earn MD and PhD degrees simultaneously from the School of Medicine and certain departments in the Swanson School of Engineering. Interested applicants should contact the MD/PhD program at 5585 Scaife Hall, 412-648-2324 for further information. http://www.mdphd.pitt.edu/

**Joint MBA/MS Degree Program**

The Swanson School of Engineering and the Joseph M. Katz Graduate School of Business have established joint MBA/MS programs with each of the seven engineering graduate degree programs. These programs are designed to meet the clear and growing need felt by various industry sectors for managers with sophisticated business and engineering skills. In today's environment, such cross-functional skills are essential in addressing multifaceted problems involving issues related to product development, quality, information systems, modeling and quantitative analysis, finance and accounting, international relations, and marketing.

Both full-time and part-time options are available. The full-time option can be completed in two academic years, whereas the part-time option may typically require a period of four to five years. The programs generally consist of 64.5 credits full time (or 69 credits part time). It is designed for students with undergraduate degrees in engineering and, in some cases, the physical sciences, preferably with industry work experience. Candidates must meet the admissions criteria of both the MBA program and the specific MS engineering program of interest.
Students accepted into the program will be expected to complete both degrees concurrently and pay full tuition. Courses will be scheduled in such a manner as to preclude students from receiving one degree before the other.

This program is only for those students seeking a professional MS engineering degree. Students interested in the research MS engineering degree track will not be admitted. Further, because of the high credit demand, students in the program will not be able to hold either research or teaching assistant positions. Students who enrolled in the joint degree program are expected to complete both degrees.

Full-time students will register for the program through the Joseph M. Katz Graduate School of Business for four semesters at the one-year MBA tuition rate. For more information see http://www.business.pitt.edu/katz/mba/academics/programs/mba-msengineering.php.

Doctor of Philosophy Programs

The general PhD requirements of the Swanson School of Engineering are listed below. Further information concerning degree requirements and options can be found under each program's description.

Entrance to the PhD Program

A graduate student who has received the Master of Science degree in one engineering program area or has equivalent preparation is eligible to enter a doctoral program in that same area. To be accepted for a doctoral program, a graduate student must have achieved a superior scholastic record and shown great promise for conducting independent research. A prospective doctoral student should have a cumulative graduate grade point average of at least 3.00 in graduate course work. Evidence of research aptitude, including favorable recommendations, is required. Exceptionally well-qualified students may be permitted to enter the PhD program without an MS degree according to the established criteria and qualifications set by each department. Admission to a doctoral program does not include any implication concerning admission to candidacy for the PhD degree.

Course and Dissertation Credit Requirements

An objective of the PhD program is to attain a high degree of competence in the student's chosen field of specialization. Completion of the PhD program requires a total of 72 credits, of which at least 18 must be for dissertation research. The graduate faculty determines the minimum course requirements for each PhD program. Typically each program has a core of well-coordinated courses followed by advanced course work in one or more specialty areas, with the number of course credits varying among programs. Additional course work may be prescribed in accord with the student's specific needs. However, all PhD students must take a minimum of 24 credits of graduate level didactic coursework (2000 or 3000 level). A student may further attain the required degree of competence beyond these 24 credits by other means including independent study under faculty supervision. Regardless of how the required competence is obtained, it must be certified by passing the appropriate series of examinations.

Students who have been formally admitted to PhD candidacy may register for dissertation research (3999). Preliminary dissertation research can be done as part of an appropriate 3997 departmental course. The number of dissertation credits for which a student registers should be commensurate with the independent research effort to be undertaken during the term. Minimum registration is three credits per term. Of the minimum 18 credits of dissertation research, at least 12 credits must be for the program's PhD dissertation research course (3999). These may be taken only after admission to candidacy; the other six credits may be in the department's pre-candidacy PhD research course. Students will be given an I grade for all research courses until the dissertation is successfully defended and submitted.

Doctoral students who have completed all credit requirements for the degree, including any minimum dissertation credit requirements, and are working full time on their dissertations may register for Full-Time Dissertation Study (FTD), which carries no credits or letter grade but provides students full-time status. Students so enrolled are assessed a special tuition fee.

Once a student registers for dissertation research (3999), he or she must continue to register for dissertation research in successive terms (not including the summer term) until the final oral examination has been passed, unless the student is eligible to register for Full Time Dissertation credit. (In special cases the major advisor may request that this requirement be waived.) Upon successful completion of the final oral examination, all I grades will be changed to S grades.

Doctor of Philosophy Evaluation/Examinations
To complete the PhD program, students must pass the preliminary evaluation, comprehensive and final oral examinations. Students who have less than a 3.000 cumulative GPA for all courses that satisfy graduation requirements are considered to be on probation and will not be permitted to take any of these examinations.

**Preliminary Evaluation (Qualifier)**

See Preliminary Evaluation under Regulations Pertaining to Doctoral Degrees for an overview of the purpose of this examination, and then review the school-specific information below. This examination is usually taken within the first two to four terms of graduate study and is a first step towards the student's formal admission to candidacy for the Doctor of Philosophy degree. Each program determines the exact format and content of this examination, which may consist of written and oral components. Qualifier examinations are usually given once a year at a time specified by the program.

**Comprehensive Examination**

See Comprehensive Examination under Regulations Pertaining to Doctoral Degrees for an overview of the purpose and regulations regarding this examination, and then review the school-specific information below. The nature and timing of this examination is determined by the department; it may be combined with students' formal presentation of their dissertation proposal. However, the Comprehensive Examination cannot be taken until at least one full term after successfully completing the Preliminary Examination. The formal thesis proposal should be scheduled as soon as the candidate is prepared to present his/her topic and research plan, since there must be at least two full terms between its successful completion and the Final Oral Examination.

**Final Oral Examination (Defense)**

See Final Oral Examination under Regulations Pertaining to Doctoral Degrees for an overview of the purpose and regulations regarding this examination, and then review the school-specific information below. The final oral examination determines the acceptability of a student's dissertation and his or her ability to comprehend, organize, and contribute to the chosen field of research. One copy of the dissertation must be submitted to each member of the doctoral committee at least two weeks before the date set for the final oral examination. Because a portion of the defense is open to the public, the student should ensure that the dissertation defense is formally announced on both the School's webpages and its videos monitors, at least two weeks prior to the defense date. Further, this examination cannot occur sooner than two full terms following the formal thesis proposal.

**Admission to PhD Candidacy**

See Admission to Candidacy for the Doctor of Philosophy Degree under Regulations Pertaining to Doctoral Degrees for the requirements for admission. An Application for Admission to Candidacy for the Doctoral Degree must be filed after these requirements have been met.

In order to have the dissertation topic approved, the student must prepare, in consultation with the major advisor, a dissertation proposal. A formal dissertation proposal conference will then be held in which the members of the doctoral committee will review the proposal and either accept, revise, or reject it. Depending on the department's procedure, this conference may be held in conjunction with the comprehensive examination. Approval of the proposal does not imply either the acceptance of a dissertation prepared in accord with the proposal or the restriction of the dissertation to this original proposal.

If the dissertation proposal is accepted by the doctoral committee, the student is formally admitted to candidacy for the Doctor of Philosophy degree. Such admittance to PhD candidacy must be accomplished at least two terms before the student plans to graduate.

**Doctoral Committee**

See Doctoral Committee under Regulations Pertaining to Doctoral Degrees for an overview of the committee's make up and responsibilities. In addition, the following school-specific rules apply in the School of Engineering:
Faculty who hold a secondary appointment and actively participate in the department will be considered as internal rather than external members of the doctoral committee. Hence, they may serve as the major advisor. Faculty members whose secondary appointment within the department is viewed as a courtesy appointment may be considered as an external committee member, but cannot serve as the student's sole committee chair (major advisor).

The composition of the Doctoral Committee must be approved by the department's graduate coordinator and either the Associate Dean for Academic Affairs or the Associate Dean for Research prior to the presentation of the formal dissertation proposal. A committee must consist of four or more persons, including at least one from another department within the University of Pittsburgh or from an appropriate graduate program at another academic institution, government agency or industry. The majority of the committee, including the major adviser, must be full or adjunct members of the Graduate Faculty. Typically the committee will consist of three internal (from the department) and one external members. In certain cases the graduate coordinator or associate dean may recommend one or more additional members of the committee if appropriate. Once the dissertation proposal is approved, the student is expected to meet at least annually with his/her Doctoral Committee.

If a committee member leaves the University, that member can continue to serve as an internal committee member provided that he/she has an adjunct appointment in the student's home department. If the major advisor (committee chair) leaves the University, then a new major advisor must be appointed by the graduate coordinator and approved by the appropriate associate dean. The new major advisor will typically be selected from among the remaining committee members. The former major advisor may remain on the committee as a member, but only if he/she has an adjunct appointment. The graduate coordinator and School administration must be informed of any proposed committee changes in the term they occur.

A major advisor has an obligation to assist the student to the successful completion of his/her dissertation. In those rare cases where the major advisor no longer feels that he/she can adequately work with the student, then it is incumbent on the department chair and graduate coordinator to meet with the committee and, if it is decided that the student is able to complete the dissertation, then select a new major advisor, typically from among the remaining members of the committee, and a replacement committee member appointed.

**PhD Dissertation**

Each student must prepare a dissertation embodying an extended original, independent investigation of a problem of significance in the student's field of specialization. The dissertation must add to the general store of knowledge or understanding of that field. Dissertations must be written in English. It is highly recommended that the student use a plagiarism-detection software (e.g., iThenticate) to ensure that no plagiarism, which is considered research misconduct, has been committed, either overtly or covertly.

A dissertation submitted to the Swanson School of Engineering in partial fulfillment of the requirements for an advanced degree must be free from any restriction, other than the author's copyright, concerning its publication by any agency outside the University. Any publication of a dissertation must be with appropriate acknowledgment to the University of Pittsburgh. After the dissertation has been prepared and approved by the major advisor, the final oral examination can be held.

**Departmental Requirements**

The policies enumerated above represent minimum requirements. In certain cases, individual departments may have stricter requirements. It is the ultimate responsibility of the student to understand the policies/requirements of his/her graduate program.

**Computational Modeling and Simulation PhD Program**

The Computational Modeling and Simulation (CMS) PhD Program at the University of Pittsburgh provides its graduate students with an integrated program of creative, independent research, course work, and teaching. Our students pursue research in diverse areas of engineering and sciences with concentration on numerical methods and computational schemes. Coupled with the University Center for Research Computing (www.crc.pitt.edu), this program offers unparalleled opportunities for individualized training in high performance computing and physical modeling. An extensive seminar series exposes students and faculty alike to the world’s leading scientists and their latest research. Pitt's outstanding research and placement resources, coupled with the university's commitment to being one of the top centers for computational research, uniquely positions us to help our PhD candidates to meet their objectives. For a review of our PhD Program in CMS, and application to this program, please see: www.cmssp.pitt.edu

**Cooperative Education**
With the renewed emphasis on professional master degree programs and the development of such initiatives as the MS/MBA, and 3+1+1 (first three years at a home institution, a fourth year at the SSoE to earn the BS degree, and a fifth year at the SSoE to earn an MS degree) programs, there is a strong need to provide graduate students, including international graduate students with a work opportunity that is an essential part of their education. This also includes PhD students who desire to take a term off in order to obtain industrial experience and perspective. Not only does the program provide them with needed experience, but it enables them to earn a reasonable amount of money over a 15 week work rotation. For more information, please visit http://www.engineering.pitt.edu/coop/.

Swanson School of Engineering Faculty

School of Engineering Faculty

Contact information and research interests of faculty members can be found on the Swanson School of Engineering faculty page.

Program and Course Offerings

Sustainable Engineering, MSSE

Overview

The Master of Science Degree in Sustainable Engineering (MS SE) is housed within the Mascaro Center for Sustainable Innovation (MCSI), with the degree granted from the Swanson School of Engineering. The 30-credit degree was designed to integrate with current MS programs in engineering, providing students with the opportunity to complete two MS degree programs with a limited time increase.

Program Objectives

- Provide advanced education to graduate students to identify and solve sustainability issues using systems approaches in the context of the triple bottom line of environmental, societal, and economic problems.
- Create a rigorous program with breadth and depth to propel graduate students to foster sustainable technologies, science, and practices in the U.S. and abroad.
- Create regional and nationally scalable sustainability solutions through service learning projects with a cohort of students.
- Provide students with experiences that enable them to communicate sustainability issues and solutions to multiple audiences.

Course Requirements

A total of 30 credits are required to earn the MS SE professional master's degree. The degree is structured so the participating student is required to take five core courses and five electives.

The four core courses are as follows:

- ENGR 2905 - CURRENT ISSUES IN SUSTAINABILITY
- CEE 2609 - LIFE CYCLE ASSESSMENT METHODS AND TOOLS
- CEE 2610 - ENGINEERING AND SUSTAINABLE DEVELOPMENT
- ENGR 2907 - (Active in Spring 2018)

Choose one of the following:

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
- PIA 2523 - GLOBAL ENERGY POLICY
- PIA 2115 - ENVIRONMENTAL ECONOMICS
- PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT
- BSPP 2328 - THE BUSINESS OF HUMANITY - STRATEGIC MANAGEMENT
Electives:

Students can choose five electives from the areas below:

**Sustainable Built Environment & Infrastructure**
- CEE 2370 - INTRODUCTION TO NONDESTRUCTIVE EVALUATION AND STRUCTURAL HEALTH MONITORING
- CEE 2340 - CONCRETE STRUCTURES 2
- CEE 2346 - REPAIR AND RETROFIT OF STRUCTURES
- CEE 2720 - URBAN TRANSPORTATION PLANNING

**Energy**
- ECE 2780 - RENEWABLE AND ALTERNATIVE ENERGY
- ECE 2781 - SMART GRID TECHNOLOGIES AND APPLICATIONS
- ECE 2795 - SPECIAL TOPICS POWER
- ECE 2250 - POWER ELECTRONICS
- ECE 2646 - LINEAR SYSTEM THEORY
- ECE 2774 - POWER SYSTEMS ANALYSIS 2

**Environmental and Water Sustainability**
- CEE 2410 - WATER RESOURCES ENGINEERING
- CEE 2416 - SEDIMENT TRANSPORT
- CEE 2500 - ENVRNMNTL ENGRG MICROBIOL
- CEE 2501 - ENVIRONMENTAL ENGINEERING CHEMISTRY
- CEE 2502 - PHYSICAL-CHEMICAL PRINCIPLES IN ENVIRONMENTAL ENGINEERING
- CEE 2511 - ENVIRONMENTAL ENGINEERING PROCESS LABORATORY
- CEE 2515 - WASTEWATER COLLECTION AND TREATMENT PLANT DESIGN

**Green Computing**
- ECE XXXX - Sustainable Computing (Pre: ECE 2162, ECE 2192)
- ECE 2160 - EMBEDDED COMPUTER SYSTEM DESIGN
- ECE XXXX - Emerging Memory Technologies
- ECE 2161 - EMBEDDED COMPUTER SYSTEM DESIGN 2
- ECE 2192 - INTRODUCTION TO VLSI DESIGN
- ECE 2193 - ADVANCED VLSI DESIGN
- ECE 2162 - COMPUTER ARCHITECTURE 1
- ECE 3162 - ADVANCED COMPUTER MICROARCHITECTURE
- ECE 2140 - SYSTEMS-ON-A-CHIP DESIGN

**Department of Bioengineering**

**Contact Information**
Graduate Degree Programs

The Department of Bioengineering offers the degrees of Master of Science in Bioengineering, Doctor of Philosophy (PhD) in Bioengineering, and a Professional Masters in Medical Product Engineering. In addition, the department has a certificate program in Medical Product Innovation and participates in the MD/PhD program with the School of Medicine's Medical Scientist Training Program and the MBA/MS program with the Katz Graduate School of Business.

The graduate program in bioengineering incorporates five programmatic tracks:

- Bioimaging and Signals
- Biomechanics
- Molecular, Cellular, and Systems Engineering
- Neural Engineering
- Medical Product Engineering*
- Tissue Engineering and Regenerative Medicine

*(Please note this track has separate tracks for the MS and PhD).

The department has an active, interdisciplinary graduate bioengineering program in conjunction with faculty from the School of Medicine, the School of Health and Rehabilitation Sciences, the School of Dental Medicine, the clinicians at the University of Pittsburgh Medical Center hospitals, and other schools and departments at the University of Pittsburgh and Carnegie Mellon University.

The graduate program is directed toward engineering and life science education and research, with particular emphasis on the PhD. Its scope is broadly defined to incorporate the application of engineering principles, methods, and technology in two broad areas: (1) scientific queries into fundamental biological phenomena and (2) the development of instrumentation, materials, devices, and systems relative to application in the biological sciences and medicine. Thus, the bioengineering faculty are applying various forms of engineering principles, mathematics, computation, technology, and methodology to a broad variety of medical and life sciences problems.

Admissions

http://www.engineering.pitt.edu/BioGraduateAdmissions/

Applicants for admission are expected to have a minimum GPA of 3.5 from an accredited BS program. They must submit transcripts of all college-level work, three letters of recommendation, a statement of purpose, and scores on the verbal, quantitative, and analytical writing sections of the Graduate Record Examination. International applicants whose first language is not English are required to submit the TOEFL, administered by the Educational Testing Service, with a minimum score of 550 (213 computer-based, 80 internet-based). In addition to these basic requirements, evidence of significant research and/or industrial experience is very important as further evidence of ability to perform well at the graduate level.

Students with a non-engineering background may be admitted provisionally on a case-by-case basis, and often are required to take undergraduate engineering and math courses considered as prerequisite for graduate course work in these areas. These undergraduate courses do not count toward their graduate degree credit requirements. Likewise, an undergraduate knowledge of physiology and basic biology and chemistry is assumed. In addition to the above basic requirements, evidence of significant research and/or industrial experience is very important as further evidence of ability
to perform well at the graduate level. These experiences should be detailed clearly in recommendation letters, as well as in the student's statement of purpose. Please note that incomplete applications will not be considered.

**Financial Assistance**

All doctoral students in the Department of Bioengineering are currently supported either by research or departmental funds. Financial assistance is typically arranged between a student and a faculty advisor. Students with exceptional qualifications will be considered for additional departmental support and fellowships.

**Bioengineering, PhD**

**PhD Requirements**

http://www.engineering.pitt.edu/Departments/Bioengineering/_Content/Programs/Graduate/Programs---accordion/

The course requirements for the PhD in Bioengineering include the following:

- Graduate Engineering Mathematics-3 credits (from an approved list of math courses)
- Statistics for Bioengineers-3 credits (from an approved list of statistics courses)
- Societal, Political, and Ethical Issues in Bioengineering-3 credits
- Life Sciences-6 credits (from an approved list of life science courses)
- Teaching Practicum-2 credits
- Seminar-6 credits total, 4 credits must be the Bioengineering Seminar
- Track Courses-9 credits (from a menu of courses for specific track)
  - Bioimaging and Signals Track
  - Biomechanics Track
  - Medical Product Engineering (MPE) - PhD Track
  - Molecular, Cellular, and Systems Engineering (MCSE) Track
  - Neural Engineering (NE) Track
  - Tissue Engineering and Regenerative Medicine (TERM) Track
- Graduate Electives-6 credits
- Grant Writing in Bioengineering-1 credit
- Doctoral Dissertation Research-33 credits

Total number of credit hours: 72 credits (plus the credits associated with the remedial courses, as applicable.) Students typically take the PhD preliminary exam after their first year in the program, and PhD proposal (comprehensive examination) is presented generally at the end of the second year. A final public PhD defense is made by each PhD candidate based on the student's research work. All students must maintain a 3.0 GPA at all times to remain in good standing in the program.

* Please note that the total of 33 credits is not necessarily the total number of credits of BIOENG 3997 that must be taken, as other courses/credits in other areas may be taken as long as the total number of credits adds up to 72 total. Students are required to take a minimum of 12 credits of BIOENG 3999 after their PhD proposal defense, as these credits cannot be taken before. Total number of credit hours: 72 credits.

**Preliminary Exam**

The PhD Preliminary Exam is given once a year, typically in early June, and is to be taken by students pursuing the PhD degree after their first two semesters of full time course work. A student is allowed no more than two opportunities to take the preliminary examination.

The purpose of the preliminary examination is to evaluate the student's ability to use fundamental principles of biomedical science and engineering approaches to investigate solutions to bioengineering problems. The basis of the examination is a specific research question (problem), chosen by the student to write a proposal on. The student may seek assistance from his/her advisor or any other faculty member for choosing the question. The examination will consist of an oral presentation and accompanying written proposal in NIH RO3 format. The written document and oral presentation
should demonstrate the student's ability to think, present, and defend in an academic environment, as well as a sufficient background in the biomedical science and engineering aspects of the chosen problem.

The examinations will be coordinated within the current graduate tracks. They will typically take place at the end of the first year of graduate studies. The scheduling of the examinations will be handled by the track coordinators, who will also determine the suitability of the research question (problem) (having both engineering and biomedical science components). The student may get help from anyone in preparing the oral presentation, but must observe the usual strict standards on plagiarism in preparing the written document. Students are encouraged to focus on one to two experiments and note both alternatives and potential problems in each experiment. Proper referencing of sources is required for both the oral and written components. One important paper in the field must be identified in the references and made available to the reviewers, who may ask for an explanation or critique of any aspect of the paper. The research proposal may be supported by preliminary data, but this is not a requirement. In addition, students must provide a written statement, signed by their advisor, to state what the student's contribution to their research was in the proposal document.

Rather, the examination committee is expected to probe the student with challenging questions to establish the depth of his/her creative and analytical thinking, as well as knowledge in appropriate background areas.

The final result of the preliminary examination will be based on the combined evaluation of the written and oral components, with three possible outcomes: unconditional pass, conditional pass, and fail.

**Committee Selection**

Committees for PhD students should consist of the student's advisor (who will act as Chair of this committee,) at least two additional faculty members from within the Department of Bioengineering and at least one faculty member from outside the Department of Bioengineering. For MS students, the committee will need to consist of three faculty members total and at least two need to be member of the Bioengineering faculty. However, all three can be Bioengineering faculty as there is no requirement to have one member from outside of Bioengineering. Students are required to receive approval from the faculty Graduate Coordinator of the committee, ideally 1-2 months prior to the proposal defense. After this takes place, the student will need to obtain a "blue form" (admission to PhD candidacy form) from the Graduate Administrator, and obtain the necessary signatures at the student's proposal. After this occurs, the form will need to be returned to the Graduate Administrator for submission to the school for approval.

Formal admission to candidacy for the Doctor of Philosophy degree (typically in the 3rd year) constitutes a promotion of the student to the most advanced stage of graduate study and provides formal approval to devote essentially exclusive attention to the research and the writing of the dissertation. **Note that it is a departmental requirement that students complete their proposal by the end of their third full year in the program.** To qualify for admission to candidacy, students must have obtained full graduate status and have satisfied the requirement of the preliminary examination. Note that a student does not necessarily need to have all coursework completed before completing their proposal. The student should submit the written proposal in NIH RO1 format to the committee at least two weeks in advance of the oral defense to the approved committee. The approval of the proposal and defense of it constitutes passing the proposal and Comprehensive Examination. The committee will meet at least once a year during the remainder of his or her PhD program culminating in the Dissertation Defense.

Once a student has completed the proposal and comprehensive exam, they may then register for 3999 credits, or "post-proposal" research credits. After the student completes 12 credits of 3999, which can easily be completed in one semester, they can then register for FTDH, or Full Time Dissertation Hours, up to and including the semester in which they graduate. Please note that no courses can be taken once a student registers for FTDH. It is important to note that students may switch into 3999 credits if the propose before the end of the add/drop period of the semester in which they complete their proposal.

**Graduation info**

Students are expected to be prepared to announce their dissertation defense date at least two weeks before their defense by emailing the information including the dissertation date, time, and location, the name and full title of their advisor, along with an abstract of no more than 400 words, to the Graduate Administrator, after which a notice will be sent out to the school. At the defense, the student is to prepare the ETD approval forms, the abstract, a copy of all publications (including journal articles, presentations, and proceedings,) and a copy of the PhD rubric form for each member of their dissertation committee.

**Bioengineering, MD/PhD**
MD/PhD Requirements

The MD/PhD program supports well-integrated basic and clinical science pre-doctoral training program. The training program links 17 PhD programs in six graduate schools within the University of Pittsburgh and Carnegie Mellon University. It is important to keep in mind that MD/PhD students are working toward TWO degrees, not just "two for the price of one". However, it is recognized that some relaxation of the requirements is appropriate for these students. For example, students in the MD/PhD program exceed the basic life science requirements for the Bioengineering PhD program. However, MD/PhD students cannot use their MD courses to opt out of the advanced engineering/math course requirements for the PhD.

The course requirements for the MD/PhD in Bioengineering include the following:

- Graduate Engineering Mathematics (from a list of approved Math courses) - 3 credits
- Statistics for Bioengineers (from a list of approved Statistics courses) - 3 credits
- Track Courses (from a list of approved courses for specific tracks) - 9 credits
- Graduate Electives (can be most graduate level courses per approval of Graduate Coordinator) - 6 credits
- Teaching Practicum, BIOENG 3003 - 2 credits
- Bioengineering Seminar - 6 credits (4 credits must be the Bioengineering Seminar, BIOENG 2023)
- Grant Writing in Bioengineering, BIOENG 2900 - 1 credit
- Doctoral Dissertation Research, BIOENG 3997 and BIOENG 3999 - 12 credits of 3999 to be taken after the proposal - 42 credits

Total number of credit hours: 72 credits (plus the credits associated with the remedial courses, as applicable).

Bioengineering/Business Administration, MS/MBA

http://www.engineering.pitt.edu/Departments/Bioengineering/_Content/Programs/Graduate/Programs---accordion/

The Department of Bioengineering and the Katz Graduate School of Business offer a dual MBA/MS program, with the following requirements for the Professional MS in Bioengineering:

Foundation Courses

- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BIOENG 2242 - SOCTL, POL & ETHCL ISS BIOTEC 2 or another approved Ethics course (determined by CMI Education Director)
- Graduate Engineering Mathematics (from a list of approved Math courses) - 3 credits
- Life Sciences (from a list of approved Life Science courses) - 6 credits
- Bioengineering Seminar, BIOENG 2023 - 2 credits

Bioengineering Track Courses

- BIOENG 2150 - MEDICAL PRODUCT IDEATION
- BIOENG 2151 - MEDICAL PRODUCT DEVELOPMENT
- BIOENG 2170 - CLINICAL BIOENGINEERING
- BIOENG 2171 - MEDICAL PRODUCT PROTOTYPING

Projects Courses

- Joint with KGSB, through the course BIOENG 2095 - 3 credits

Please note that all students must maintain a 3.0 GPA at all times to remain in good standing in the program.

Bioengineering, MS
**MS Requirements**

The course requirements for the MS in Bioengineering include the following:

**Research M.S. Program (Thesis)**

The Research MS program requires a total of 31 credits, which includes:

- Graduate Engineering Mathematics (from a list of approved Math courses) - 3 credits
- Statistics for Bioengineers (from a list of approved Statistics courses) - 3 credits
- Societal, Political and Ethical Issues in Bioengineering, BIOENG 2241 or BIOENG 2242 - 3 credits
- Life Sciences (from a list of approved Life Science courses) - 3 credits
- Track Courses (from a list of approved courses for specific tracks) - 9 credits
- MS Thesis, BIOENG 2999 - 6 credits
- Teaching Practicum, BIOENG 3003 - 1 credit
- Bioengineering Seminar, BIOENG 2023 - 3 credits

Total - 31 credits

Other required courses may be tailored to the student's background and interests. Typically, completion of the Research MS program requires two years. Within the first year of enrollment (preferably within the first semester), the MS candidate is expected to finalize the general area in which he/she will write a thesis and an advisor who will guide the work. By the third semester of enrollment, the student is to prepare a Master's Thesis, following University requirements for Electronic Theses and Dissertations (ETDs.) The student (under the guidance of his/her advisor) selects a thesis committee of three or more persons. For MS students, the committee will need to consist of three faculty members total and at least two need to be member of the Bioengineering faculty. However, all three can be Bioengineering faculty, as there is no requirement to have one member from outside of Bioengineering. The committee should consist of the student's advisor (who will act as Chairman of this committee), at least one additional faculty member from within the Department of Bioengineering and at least one faculty member from outside the Department of Bioengineering. The committee meets at least once per year and oversees the Thesis Defense.

**Bioengineering - Medical Product Innovation Certificate**

**Requirements**

http://www.engineering.pitt.edu/Sub-Sites/Centers/CMI/_Content/Prospective-Students/Graduate-Certificate-in-Medical-Product-Innovation/

The Graduate Certificate in Medical Product Innovation (CMI), offered by the Department of Bioengineering in conjunction with CMI is multi-faceted, reflecting the multidisciplinary nature of medical innovation, with the objectives:

1. To educate engineering graduate students at the MS and PhD levels in clinical, engineering, business, and legal aspects of the medical device design and development process;
2. To educate students of the health sciences (residents, fellows and clinicians) in engineering, business, and legal methodologies in identifying and developing innovative solutions to their problems;
3. To educate law students in engineering methodology, regulatory constraints, medical device intellectual property, and commercialization aspects of medical innovation;
4. To educate business (MBA) students in clinical, engineering, regulatory, and legal aspects of medical innovation and entrepreneurship; and
5. To train all of the above disciplines in the art of working in multi-disciplinary teams to accomplish the medical innovation process, from medical technology ideation, through development, to realization and commercialization.

Certificate candidates must complete a minimum of 5 courses (15 credits) drawn from the following areas: 
- Medical Product Innovation Core Curriculum, BIOENG 2150 and BIOENG 2151 - 6 credits
- Electives - 9 credits from each of the following subgroups:
  - Medical Ethics, BIOENG 2241, or BIOENG 2242 - 3 credits
  - Entrepreneurship/Engineering Management (per approval by CMI Education Director) - 3 credits
  - Legal Aspects of Medical Product Engineering (per approval by CMI Education Director) - 3 credits
- More information and details on credit requirements for the Certificate Program can be found here: http://www.engineering.pitt.edu/Sub-Sites/Centers/CMI/_Content/Education/Graduate-Certificate-in-Medical-Product-Innovation/

Students currently enrolled in any graduate program in the University (MS, MBA, JD, PhD, etc.) are eligible to obtain the C-MPI upon completion of the Certificate requirements. No formal admissions process is required. Post-baccalaureate and post-professional students interested only in obtaining the C-MPI need to apply to the Department of Bioengineering for admission to the Certificate program.

Department of Chemical and Petroleum Engineering

Contact Information

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http://www.engineering.pitt.edu/chemical/

Graduate Degree Programs

The Department of Chemical and Petroleum Engineering awards Master of Science degrees in chemical and petroleum engineering and the Doctor of Philosophy degree in chemical engineering; offers several dual degree programs; and participates in joint degree programs with the Katz Graduate School of Business and the School of Medicine. The general objective of all programs is to develop the ability of the chemical or petroleum engineer to carry out original research at advanced levels.

The aim of the doctoral program is to develop individuals for careers in academic and industrial research. The program is flexible. Its primary emphasis is on innovative and distinctive research on the cutting edge of engineering science. Students wishing to pursue the PhD should have an outstanding academic background and a desire and ability to carry out original research. PhD students here are given independence and responsibility. They are not only encouraged, but are expected to, develop research ideas, which they propose and defend. They work closely with their faculty research advisors and often participate in a research group addressing relevant engineering problems. To supplement their research, students take advanced courses in areas related to their research work. Candidates for the PhD achieve a high level of proficiency through this advanced course work and individual study in their research area and related areas.

The graduate program offers MS and PhD students the opportunity to pursue independent research in five research focus areas in which the department has developed national and international reputations: biotechnology, catalysis, multi-scale modeling, materials, and environment and energy. Additional research areas exist in programs that have exploited opportunities at the interface between disciplines. The department's recognized research activities impact the following boundaries between established disciplines: biotechnology/environment; biology/medicine/engineering; energy/environment; polymer chemistry/physics; catalysis/chemistry/materials; catalysis/energy; and catalysis/environment.

Admissions

Chemical Engineering: For admission to full graduate status, students should have an undergraduate degree in chemical engineering with high academic standing from an ABET accredited curriculum.

Petroleum Engineering: For admission to full graduate status, students should have an undergraduate degree in engineering or geology and high academic standing.
Students from chemistry or from another engineering discipline who desire to pursue a graduate degree in chemical engineering must have a high grade point average and prepare for graduate course work by taking selected undergraduate courses in chemical engineering. See MS and PhD Requirements for Students with Non-Chemical Engineering BS Degree. Each case for admission will be evaluated individually, and applications are encouraged.

Interested students may apply online. Questions can be addressed as follows:

1. Send e-mail to che@engr.pitt.edu. Be sure to include your name and complete mailing address.
2. Send surface mail to:
   University of Pittsburgh
   Department of Chemical and Petroleum Engineering
   Vice Chair for Graduate Education
   940 Benedum Hall
   Pittsburgh, PA 15260

Financial Assistance

While admission to the graduate program does not imply the granting of financial aid, most fulltime PhD students are supported. All students who qualify for financial assistance are awarded departmental fellowships. In addition, a select few top students receive supplementary dean's fellowships. An applicant interested in obtaining financial aid should request information directly from the department. Applications for admission and financial aid should be submitted by January 1 for the following fall term.

Chemical Engineering, PhD

The following special regulations pertain to the Department of Chemical and Petroleum Engineering. For additional requirements, review the school-wide information in the Doctor of Philosophy Programs section as well as the Regulations Pertaining to Doctoral Degrees.

Entry to the PhD Program

In order to enter the PhD program, a student must have completed an MS degree and passed the PhD oral qualifying preliminary examination. Especially well-prepared students, with consent of the department faculty, may be granted permission to obtain the PhD degree directly without obtaining an MS degree. This eliminates the required completion of the MS thesis. All MS-level course work is still required.

During the summer of the first year as a graduate student in the department, the student wishing to continue into the PhD program must take the oral preliminary examination. Failure to take this examination at this time will forfeit one of two opportunities to pass this examination. The structure and content of the PhD oral qualifying examination is subject to change in order to meet the requirements of the faculty and PhD program.

PhD Course Requirements

A student's course series will be designed by the student and his/her thesis advisor, approved by the PhD committee, and signed off by the graduate coordinator. This sequence should include courses in the student's research area as well as courses not related to his/her research area. Forty-two credits beyond the MS degree are required and must include the following courses:

- XX 2/3XXX Electives (Science, Math, or Engineering) 12 credits
- CHE 2982 - ISSUES IN RESEARCH AND TEACHING (if not taken at MS level)
- CHE 3990 - ADVANCED GRADUATE PROJECTS (18 credit minimum)
- CHE 3999 - PH.D. DISSERTATION (taken after PhD proposal defense), 12 credits (minimum)

Additional course requirements may include the following, if the student has not previously completed courses in these areas at the master's level:
Note:

Students must also register for one credit in PhD research methodology each term. A minimum of 72 graduate credit hours, including MS courses and thesis credits, are required. All full-time students must fulfill a two-term teaching requirement during their course of study and attend the departmental graduate seminar series during the fall and spring terms.

Dissertation Requirement

A dissertation topic should be selected after passing the PhD oral qualifying examination. This is done by submitting a formal request in writing to the departmental graduate faculty for appointment of a faculty advisor (or advisors). Preliminary work (at least 18 credits) can be done on the dissertation by registering for CHE 3990. After being admitted to PhD candidacy, the student should concentrate on the dissertation, registering for CHE 3999 (minimum 12 credits). Most students complete more than 30 credits of these courses.

PhD Comprehensive Examination and Proposal Conference

This is an oral examination covering chemical engineering at the PhD level and is based upon a written dissertation proposal. If this examination is passed, a doctoral committee will be officially appointed. This exam should be taken at least 18 months before completion of the dissertation and preferably within the first year beyond the MS.

PhD Final Oral Examination

A final review (defense) of the thesis must be conducted by the dissertation committee in order to determine the acceptability of the dissertation.

Off-Campus Research

Occasionally, a research program can be conducted at a government or industrial site. In those situations the student should submit a proposal for such research to the graduate coordinator for approval by the faculty. The faculty advisor must be actively involved in the research.

Chemical and Petroleum Engineering Dual Degree, MS

Requirements

A program of study is available in which a student may pursue a dual degree between chemical engineering and petroleum engineering. In general, 48 credits are required, including the fundamental courses in the two areas. Both thesis and non-thesis options are possible. The required chemical engineering courses are:

- CHE 2101 - FUNDAMENTALS OF THERMODYNAMICS
- CHE 2201 - FUNDAMENTAL OF REACTION PROCESSES
- CHE 2301 - FUNDAMENTAL TRANSPORT PROCESSES 1
- CHE 2410 - MATHMTCL METHD IN CHEMCL ENGRG 1

and the required petroleum engineering courses are:

- PETE 2160 - PETROLEUM RESERVOIR ENGINEERING
- PETE 2201 - RECOVERY OF OIL BY WATERFLOODING
- PETE 2204 - ENHANCED OIL RECOVERY PROCESSES
Additional requirements for the Dual Degree MS, non-thesis options:

- CHE 2910 - SPECIAL PROJECTS
- 3 course credits in Chemical or Petroleum Engineering coursework
- 9 additional course credits from the approved list (as specified Master of Science in Petroleum Engineering) of graduate offerings in engineering or geology

Additional requirements for Dual Degree MS with thesis:

- 6 course credits from the approved list (as specified Master of Science in Petroleum Engineering) of graduate offerings in engineering or geology
- CHE 2982 - ISSUES IN RESEARCH AND TEACHING
- CHE 2999 - M.S. THESIS or PETE 2999 - M.S. THESIS
- Registration for one credit of CHE 2980 - MS RESEARCH METHODOLOGY or PETE 2980 - MS RESEARCH METHODOLOGY each fall and spring term until graduation
- Attendance at the Department Seminar series each fall and spring term

MS Final Examination

A final review (oral defense) of the MS Thesis must be conducted by the thesis committee in order to determine the acceptability of the thesis. The committee consists of the student's major advisor and two (2) other members of the faculty.

Note:

No single course can be used to satisfy both a core requirement and elective requirement.

Students without a BS degree in engineering must take, in addition, either the online "bridging course" offered in Jan (1st class) and May (2nd class) by Michigan State University (See http://www.egr.msu.edu/ for details about the bridging courses CHE 804 and 805) or CHE 0300 (sophomore-level) "Transport Phenomena" class offered during the Fall term. Neither of these classes can serve as an elective nor core course substitute in the MS in Petroleum Engineering required classes.

Chemical Engineering (Professional Engineer Program), MSChE

Students who wish to pursue advanced study in chemical engineering may apply for admission to the Professional Engineer Program. It differs from the regular MS program in two important respects:

1. Course work replaces the MS thesis requirement.
2. The student completes a 3-credit special project course, CHE 2910, during their last term in the program. This course could be satisfied, for example, by a project with a faculty member, or a project based on their professional work (for engineers currently working in industry) for which a faculty member agrees to serve as advisor. Submission of a term paper, which is completed under the advisement of a member of the faculty, is required.

A minimum of 31 credit hours of course work is required.
These must include the five core courses and elective courses listed below.

- CHE 2101 - FUNDAMENTALS OF THERMODYNAMICS
- CHE 2201 - FUNDAMENTALS OF REACTION PROCESSES
- CHE 2301 - FUNDAMENTALS OF TRANSPORT PROCESSES
- CHE 2410 - MATHMETICAL METHODS IN CHEMICAL ENGINEERING
- CHE 2910 - SPECIAL PROJECTS
- ChE 2XXX - Chemical Engineering Elective (Graduate Level)
- ENGR 2/3XXX - Engineering Elective (Graduate Level)
- ENGR 2/3XXX - Engineering Elective (Graduate Level)
- XX 2/3XXX - Elective (Graduate Level)
- XX 2/3XXX - Elective (Graduate Level)

Note:

Up to 6 credit hours may be elected in approved graduate course offerings outside the department (denoted by XX, above). Students who wish to enter this program should first apply for admission to graduate study in chemical engineering. Once admitted, students can then request admission to the Professional Engineering Program.

No single course can be used to satisfy both a core requirement and elective requirement.

Students without a BS degree in engineering must take, in addition, either the online "bridging course" offered in Jan (1st class) and May (2nd class) by Michigan State University (See http://www.cer.msu.edu/ for details about the bridging courses CHE 804 and 805) or CHE 0300 (sophomore-level) "Transport Phenomena" class offered during the Fall term. Neither of these classes can serve as an elective nor core course substitute in the MS in Petroleum Engineering required classes.

**Chemical Engineering (Research-Oriented Program), MSChE**

**Requirements**

The candidate for the Master of Science degree must demonstrate proficiency in basic chemical engineering subjects by successfully taking the following required courses:

- CHE 2101 - FUNDAMENTALS OF THERMODYNAMICS
- CHE 2201 - FUNDAMENTALS OF REACTION PROCESSES
- CHE 2301 - FUNDAMENTALS OF TRANSPORT PROCESSES
- CHE 2410 - MATHMETICAL METHODS IN CHEMICAL ENGINEERING
- CHE 2982 - ISSUES IN RESEARCH AND TEACHING

In addition to these 15 credits, the student must satisfactorily complete the following courses:

- At least 9 additional credits of graduate-level course work, at least 3 of which must be in chemical engineering. Approved courses can be taken outside the department.
- Six credits of CHE 2999 - M.S. THESIS must also be taken.
- Three credits for Research Methodology (see below).

A full-time student will normally take 33 credits.

Full-time students are required to register each term for Research Methodology, a 1-credit course. In Research Methodology, a letter grade will be given each term based upon the student's research performance. Full-time students are also required to attend the graduate seminar during the fall and spring terms. It should be emphasized that the preceding course requirements are minimum requirements, and additional work may be necessary for an individual student, especially if the student's undergraduate degree is not in chemical engineering.
A student who does not maintain a B (3.00 GPA) average in all MS-level courses is put on academic probation. The graduate faculty of the Department of Chemical and Petroleum Engineering will review all cases of probation each term and determine whether the student will be permitted to continue to pursue graduate study. Should a student receive a grade lower than B- in a required MS course, the student will be required to repeat that course and receive a B- grade or better before being permitted to graduate.

A student with full-time status should discuss possible thesis topics with at least three members of the departmental faculty and then submit a written request to the faculty for assignment of a thesis advisor. After the faculty assigns an advisor, the student can begin the thesis. The MS thesis oral examination is given at the completion of the thesis. All full-time master's students must participate in teaching a course during one term as a master's student.

Students wishing to continue into the PhD program after the MS degree must have a B or better grade in each of the five core required courses and should take the oral qualifying examination after their first year in residence. Failure to do so will forfeit one of two opportunities to pass this examination.

**Note:**

No single course can be used to satisfy both a core requirement and elective requirement.

Students without a BS degree in engineering must take, in addition, either the online "bridging course" offered in Jan (1st class) and May (2nd class) by Michigan State University (See http://www.egr.msu.edu/ for details about the bridging courses CHE 804 and 805) or CHE 0300 (sophomore-level) "Transport Phenomena" class offered during the Fall term. Neither of these classes can serve as an elective nor core course substitute in the MS in Petroleum Engineering required classes.

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**Petroleum Engineering, MSPE**

The candidate for the degree of non-thesis Master of Science in Petroleum Engineering must demonstrate proficiency in petroleum engineering by passing the following:

**Mandatory Courses:**

- PETE 2160 - PETROLEUM RESERVOIR ENGINEERING
- PETE 2201 - RECOVERY OF OIL BY WATERFLOODING
- PETE 2204 - ENHANCED OIL RECOVERY PROCESSES
- PETE 2205 - PETROLEUM PRODUCTION ENGINEERING
- PETE 2207 - PETROLEUM AND NATURAL GAS PROCESSING
- PETE 2208 - PETROLEUM DRILLING AND WELL COMPLETION DESIGN
- PETE 2209 - HYDRAULIC FRACTURING MECHANICS AND APPLICATIONS
- CHE 2410 - MATHMTCL METHD IN CHEMCL ENGRG 1

**Note:**

In addition to these 24 credits, the student must satisfactorily complete two other courses from the accepted electives list in order to fulfill the 30 credits required for the MS degree.

**Accepted Electives:**

- GEOL 2110 - PLATE TECTONICS
- GEOL 2151 - GROUNDWATER GEOLOGY
- GEOL 2449 - GIS, GPS, AND COMPUTER METHODS
- GEOL 2640 - ADV GEOHAZARDS & RISK MGMNT
Note:

No single course can be used to satisfy both a core requirement and elective requirement.

Students without a BS degree in engineering must take, in addition, either the online "bridging course" offered in Jan (1st class) and May (2nd class) by Michigan State University (See http://www.egr.msu.edu/ for details about the bridging courses CHE 804 and 805) or CHE 0300 (sophomore-level) "Transport Phenomena" class offered during the Fall term. Neither of these classes can serve as an elective nor core course substitute in the MS in Petroleum Engineering required classes.

Department of Civil and Environmental Engineering

Contact Information

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http://www.engineering.pitt.edu/Civil/

Graduate Degree Programs

http://www.engineering.pitt.edu/Departments/Civil-Environmental/Graduate-Overview/

The Department of Civil and Environmental Engineering offers graduate study and research leading to the Master of Science in Civil Engineering and Doctor of Philosophy degrees. Also offered is a joint degree program resulting in a second Master of Science degree in mathematics, and a joint degree program with the Katz Graduate School of Business resulting in a MBA degree. The MS in Civil Engineering and the PhD in engineering may be pursued in one of the following areas:

The Master of Science degree in Civil and Environmental Engineering is primarily designed for students with an undergraduate degree in engineering, although students with other backgrounds can be accommodated with specially designed programs. An MS degree can be pursued by either a full-time or part-time student in one of the following areas:

- Construction Management
- Environmental Engineering
- Geotechnical and Pavement Engineering
The areas of study for the Ph.D. in Civil Engineering in the Department of Civil and Environmental Engineering within the Swanson School of Engineering are divided into two integrated research areas and sub-component specialty areas as follows:

- **Sustainability and Environmental Engineering (SEE):**
  - Environmental Engineering;
  - Sustainable Engineering; and
  - Water Resources Engineering

- **Advanced Infrastructure Systems (AIS):**
  - Geotechnical and Pavement Engineering;
  - Structural Engineering and Mechanics; and
  - Transportation Engineering.

### Civil and Environmental Engineering - Advanced Infrastructure Systems - Geotechnical and Pavement Engineering Specialty, PhD

**Requirements**

http://www.engineering.pitt.edu/Departments/Civil-Environmental/_Content/Graduate/Civil-Graduate-Programs/

Students pursuing the PhD must complete a minimum of 72 credits, including the following:

- 24 course credits (8 courses) in major area
- 15 additional course or special investigation credits in major area
- 9 course credits (three courses) in minor area
- 18 credits of dissertation research

The total number of credits above these minimum requirements will depend on the student's background, academic achievement, and dissertation topic. This decision will be made in consultation with the major advisor.

Students must complete the following required courses (or equivalent*) as part of their Major Concentration Coursework:

- CEE 2612 - DESIGN AND ANALYSIS OF EXPERIMENTS
- CEE 2333 - INTRODUCTION TO FINITE ELEMENTS
- CEE 2321 - ELASTICITY, PLASTICITY AND FRACTURE MECHANICS

* Courses can be accepted as "equivalent" with prior approval by both the student's academic advisor and the academic coordinator.

In addition to the 3 required courses, each student must complete 3 courses toward the Minor Concentration and 5 more elective courses towards the Major Concentration for a total of 11 Lecture Courses, i.e., a minimum of 33 credits of post-baccalaureate coursework taken at Pitt (2XXX level or higher) or transferred in from post-baccalaureate study. The coursework should be comprised of didactic ("book") courses and not include seminar or research courses.

- Up to 30 credits may be applied to the Major Concentration and/or Minor Concentration from previously completed post-baccalaureate study.

- A minor area of concentration can be within any approved coherent area of science or engineering at the University of Pittsburgh outside of CEE.

- Doctoral Research (CEE 3997 - RESEARCH, PH.D) may only be taken following successful completion of the PhD Preliminary Exam.

- At least 12 credits of the Dissertation credit may be taken as Doctor Dissertation (CEE 3999 - PH.D. DISSERTATION) which may only be taken following successful completion of the PhD Dissertation Proposal Exam. Remaining Dissertation credit may be taken as Doctor Research CEE 3997 - RESEARCH, PH.D or Doctoral Dissertation.
- All students must enroll in the departmental seminar (CEE 2085 - GRADUATE DEPARTMENTAL SEMINAR) every semester of full-time residency (i.e., full-time study in the PhD program).

Additional Information

Plan of Study

The PhD Plan of Study is prepared by the student with the aid of the student's faculty advisor during the student's first two terms of graduate study. It should be approved and signed by the faculty advisor, all other faculty members in the program area, the graduate coordinator, and the department chair. Copies should be made available to the student, the faculty advisor, and the academic coordinator. Any change in the Plan of Study must be approved by the faculty advisor and the academic coordinator, and should likewise be recorded.

PhD Examination Structure

All PhD candidates must pass the preliminary, comprehensive, and final oral examinations:

Preliminary Examination

The purpose of this examination is to determine the student's potential to complete the PhD program. It is organized by the advisor and faculty from the student's program area, before or sometime during the first two terms of the program.

Comprehensive Examination

All PhD students must take this examination toward the end of their course work. Students must submit a written proposal of their expected dissertation research and pass a presentation and comprehensive oral examination administered by the student's doctoral committee. The comprehensive examination committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering. The written proposal is recommended to be in the format of a standard federal research proposal (e.g., National Science Foundation) in terms of length, formatting, and technical content. A student must have a cumulative GPA of 3.0/4.0 or higher to be allowed to participate in the examination. The examination can be administered no sooner than 1 term (i.e., 4 months) following completion of the Preliminary Exam and no later than 2 terms (i.e., 8 months) prior to the Dissertation Defense.

Final Oral Examination

This is an oral defense of the student's PhD dissertation. The examination will be administered by the doctoral committee. The doctoral committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering.

Civil and Environmental Engineering - Advanced Infrastructure Systems - Structural Engineering and Mechanics Specialty, PhD

Requirements

http://www.engineering.pitt.edu/Departments/Civil-Environmental/_Content/Graduate/Civil-Graduate-Programs/

Students pursuing the PhD must complete a minimum of 72 credits, including the following:
24 course credits (8 courses) in major area
15 additional course or special investigation credits in major area
9 course credits (three courses) in minor area
18 credits of dissertation research

The total number of credits above these minimum requirements will depend on the student's background, academic achievement, and dissertation topic. This decision will be made in consultation with the major advisor.

Students must complete the following required courses (or equivalent*) as part of their **Major Concentration** Coursework:

- CEE 2612 - DESIGN AND ANALYSIS OF EXPERIMENTS
- CEE 2333 - INTRODUCTION TO FINITE ELEMENTS
- CEE 2321 - ELASTICITY, PLASTICITY AND FRACTURE MECHANICS

* Courses can be accepted as "equivalent" with prior approval by both the student's academic advisor and the academic coordinator.

In addition to the 3 required courses, each student must complete 3 courses toward the **Minor Concentration** and 5 more elective courses towards the **Major Concentration** for a total of 11 Lecture Courses, i.e., a minimum of 33 credits of post-baccalaureate coursework taken at Pitt (2XXX level or higher) or transferred in from post-baccalaureate study. The coursework should be comprised of didactic ("book") courses and not include seminar or research courses.

- Up to 30 credits may be applied to the **Major Concentration** and/or **Minor Concentration** from previously completed post-baccalaureate study.
- A minor area of concentration can be within any approved coherent area of science or engineering at the University of Pittsburgh outside of CEE.
- Doctoral Research (CEE 3997 - RESEARCH, PH.D) may only be taken following successful completion of the PhD Preliminary Exam.
- At least 12 credits of the Dissertation credit may be taken as Doctor Dissertation (CEE 3999 - PH.D. DISSERTATION) which may only be taken following successful completion of the PhD Dissertation Proposal Exam. Remaining Dissertation credit may be taken as Doctor Research CEE 3997 - RESEARCH, PH.D or Doctoral Dissertation.
- All students must enroll in the departmental seminar (CEE 2085 - GRADUATE DEPARTMENTAL SEMINAR) every semester of full-time residency (i.e., full-time study in the PhD program).

**Additional Information**

**Plan of Study**

The PhD Plan of Study is prepared by the student with the aid of the student's faculty advisor during the student's first two terms of graduate study. It should be approved and signed by the faculty advisor, all other faculty members in the program area, the graduate coordinator, and the department chair. Copies should be made available to the student, the faculty advisor, and the academic coordinator. Any change in the Plan of Study must be approved by the faculty advisor and the academic coordinator, and should likewise be recorded.

**PhD Examination Structure**

All PhD candidates must pass the preliminary, comprehensive, and final oral examinations:

**Preliminary Examination**

The purpose of this examination is to determine the student's potential to complete the PhD program. It is organized by the advisor and faculty from the student's program area, before or sometime during the first two terms of the program.
Comprehensive Examination

All PhD students must take this examination toward the end of their course work. Students must submit a written proposal of their expected dissertation research and pass a presentation and comprehensive oral examination administered by the student's doctoral committee. The comprehensive examination committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering. The written proposal is recommended to be in the format of a standard federal research proposal (e.g., National Science Foundation) in terms of length, formatting, and technical content. A student must have a cumulative GPA of 3.0/4.0 or higher to be allowed to participate in the examination. The examination can be administered no sooner than 1 term (i.e., 4 months) following completion of the Preliminary Exam and no later than 2 terms (i.e., 8 months) prior to the Dissertation Defense.

Final Oral Examination

This is an oral defense of the student's PhD dissertation. The examination will be administered by the doctoral committee. The doctoral committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering.

Civil and Environmental Engineering - Advanced Infrastructure Systems - Transportation Engineering Specialty, PhD

Requirements

http://www.engineering.pitt.edu/Departments/Civil-Environmental/_Content/Graduate/Civil-Graduate-Programs/

Students pursuing the PhD must complete a minimum of 72 credits, including the following:

- 24 course credits (8 courses) in major area
- 15 additional course or special investigation credits in major area
- 9 course credits (three courses) in minor area
- 18 credits of dissertation research

The total number of credits above these minimum requirements will depend on the student's background, academic achievement, and dissertation topic. This decision will be made in consultation with the major advisor.

Students must complete the following required courses (or equivalent*) as part of their Major Concentration Coursework:

- CEE 2612 - DESIGN AND ANALYSIS OF EXPERIMENTS
- CEE 2333 - INTRODUCTION TO FINITE ELEMENTS
- CEE 2321 - ELASTICITY, PLASTICITY AND FRACTURE MECHANICS

* Courses can be accepted as "equivalent" with prior approval by both the student's academic advisor and the academic coordinator.

In addition to the 3 required courses, each student must complete 3 courses toward the Minor Concentration and 5 more elective courses towards the Major Concentration for a total of 11 Lecture Courses, i.e., a minimum of 33 credits of post-baccalaureate coursework taken at Pitt (2XXX level or higher) or transferred in from post-baccalaureate study. The coursework should be comprised of didactic ("book") courses and not include seminar or research courses.

- Up to 30 credits may be applied to the Major Concentration and/or Minor Concentration from previously completed post-baccalaureate study.

- A minor area of concentration can be within any approved coherent area of science or engineering at the University of Pittsburgh outside of CEE.

- Doctoral Research (CEE 3997 - RESEARCH, PH.D) may only be taken following successful completion of the PhD Preliminary Exam.
- At least 12 credits of the Dissertation credit may be taken as Doctor Dissertation (CEE 3999 - PH.D. DISSERTATION) which may only be taken following successful completion of the PhD Dissertation Proposal Exam. Remaining Dissertation credit may be taken as Doctor Research CEE 3997 - RESEARCH, PH.D or Doctoral Dissertation.

- All students must enroll in the departmental seminar (CEE 2085 - GRADUATE DEPARTMENTAL SEMINAR) every semester of full-time residency (i.e., full-time study in the PhD program).

Additional Information

Plan of Study

The PhD Plan of Study is prepared by the student with the aid of the student's faculty advisor during the student's first two terms of graduate study. It should be approved and signed by the faculty advisor, all other faculty members in the program area, the graduate coordinator, and the department chair. Copies should be made available to the student, the faculty advisor, and the academic coordinator. Any change in the Plan of Study must be approved by the faculty advisor and the academic coordinator, and should likewise be recorded.

PhD Examination Structure

All PhD candidates must pass the preliminary, comprehensive, and final oral examinations:

Preliminary Examination

The purpose of this examination is to determine the student's potential to complete the PhD program. It is organized by the advisor and faculty from the student's program area, before or sometime during the first two terms of the program.

Comprehensive Examination

All PhD students must take this examination toward the end of their course work. Students must submit a written proposal of their expected dissertation research and pass a presentation and comprehensive oral examination administered by the student's doctoral committee. The comprehensive examination committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering. The written proposal is recommended to be in the format of a standard federal research proposal (e.g., National Science Foundation) in terms of length, formatting, and technical content. A student must have a cumulative GPA of 3.0/4.0 or higher to be allowed to participate in the examination. The examination can be administered no sooner than 1 term (i.e., 4 months) following completion of the Preliminary Exam and no later than 2 terms (i.e., 8 months) prior to the Dissertation Defense.

Final Oral Examination

This is an oral defense of the student's PhD dissertation. The examination will be administered by the doctoral committee. The doctoral committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering.

Civil and Environmental Engineering - Sustainability and Environmental Engineering - Environmental Engineering Specialty, PhD
Requirements

http://www.engineering.pitt.edu/Departments/Civil-Environmental/_Content/Graduate/Civil-Graduate-Programs/

Students pursuing the PhD must complete a minimum of 72 credits, including the following:

- 24 course credits (8 courses) in major area
- 15 additional course or special investigation credits in major area
- 9 course credits (three courses) in minor area
- 18 credits of dissertation research

The total number of credits above these minimum requirements will depend on the student's background, academic achievement, and dissertation topic. This decision will be made in consultation with the major advisor.

- All PhD students must complete CEE 2612 - DESIGN AND ANALYSIS OF EXPERIMENTS as part of their Major Concentration Coursework.

- Students must also complete 2 courses from the following 3 options (or equivalent*) as part of their Major Concentration Coursework:
  
  - CEE 2502 - PHYSICAL-CHEMICAL PRINCIPLES IN ENVIRONMENTAL ENGINEERING
  - CEE 3408 - ADVANCED ENVIRONMENTAL FLUID MECHANICS OR CEE 3414 - ADVANCED HYDROLOGY
  - CEE 3609 - ADVANCED TOPICS IN LIFE CYCLE ASSESSMENT

* Courses can be accepted as "equivalent" with prior approval by both the student's academic advisor and the academic coordinator.

In addition to the 3 required courses, each student must complete 3 courses toward the Minor Concentration and 5 more elective courses towards the Major Concentration for a total of 11 Lecture Courses, i.e., a minimum of 33 credits of post-baccalaureate coursework taken at Pitt (2XXX level or higher) or transferred in from post-baccalaureate study. The coursework should be comprised of didactic ("book") courses and not include seminar or research courses.

- Up to 30 credits may be applied to the Major Concentration and/or Minor Concentration from previously completed post-baccalaureate study.

- A minor area of concentration can be within any approved coherent area of science or engineering at the University of Pittsburgh outside of CEE.

- Doctoral Research (CEE 3997 - RESEARCH, PH.D) may only be taken following successful completion of the PhD Preliminary Exam.

- At least 12 credits of the Dissertation credit may be taken as Doctor Dissertation (CEE 3999 - PH.D. DISSERTATION) which may only be taken following successful completion of the PhD Dissertation Proposal Exam. Remaining Dissertation credit may be taken as Doctor Research CEE 3997 - RESEARCH, PH.D or Doctoral Dissertation.

- All students must enroll in the departmental seminar (CEE 2085 - GRADUATE DEPARTMENTAL SEMINAR) every semester of full-time residency (i.e., full-time study in the PhD program).

Additional Information

Plan of Study

The PhD Plan of Study is prepared by the student with the aid of the student's faculty advisor during the student's first two terms of graduate study. It should be approved and signed by the faculty advisor, all other faculty members in the program area, the graduate coordinator, and the department chair. Copies should be made available to the student, the faculty advisor, and the academic coordinator. Any change in the Plan of Study must be approved by the faculty advisor and the academic coordinator, and should likewise be recorded.

PhD Examination Structure

All PhD candidates must pass the preliminary, comprehensive, and final oral examinations:
Preliminary Examination

The purpose of this examination is to determine the student's potential to complete the PhD program. It is organized by the advisor and faculty from the student's program area, before or sometime during the first two terms of the program.

Comprehensive Examination

All PhD students must take this examination toward the end of their course work. Students must submit a written proposal of their expected dissertation research and pass a presentation and comprehensive oral examination administered by the student's doctoral committee. The comprehensive examination committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering. The written proposal is recommended to be in the format of a standard federal research proposal (e.g., National Science Foundation) in terms of length, formatting, and technical content. A student must have a cumulative GPA of 3.0/4.0 or higher to be allowed to participate in the examination. The examination can be administered no sooner than 1 term (i.e., 4 months) following completion of the Preliminary Exam and no later than 2 terms (i.e., 8 months) prior to the Dissertation Defense.

Final Oral Examination

This is an oral defense of the student's PhD dissertation. The examination will be administered by the doctoral committee. The doctoral committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering.

Civil and Environmental Engineering - Sustainability and Environmental Engineering - Sustainable Engineering Specialty, PhD

Requirements

http://www.engineering.pitt.edu/Departments/Civil-Environmental/_Content/Graduate/Civil-Graduate-Programs/

Students pursuing the PhD must complete a minimum of 72 credits, including the following:

- 24 course credits (8 courses) in major area
- 15 additional course or special investigation credits in major area
- 9 course credits (three courses) in minor area
- 18 credits of dissertation research

The total number of credits above these minimum requirements will depend on the student's background, academic achievement, and dissertation topic. This decision will be made in consultation with the major advisor.

- All PhD students must complete CEE 2612 - DESIGN AND ANALYSIS OF EXPERIMENTS as part of their Major Concentration Coursework.
- Students must also complete 2 courses from the following 3 options (or equivalent*) as part of their Major Concentration Coursework:
  - CEE 2502 - PHYSICAL-CHEMICAL PRINCIPLES IN ENVIRONMENTAL ENGINEERING
  - CEE 3408 - ADVANCED ENVIRONMENTAL FLUID MECHANICS OR CEE 3414 - ADVANCED HYDROLOGY
  - CEE 3609 - ADVANCED TOPICS IN LIFE CYCLE ASSESSMENT

*Courses can be accepted as "equivalent" with prior approval by both the student's academic advisor and the academic coordinator.

In addition to the 3 required courses, each student must complete 3 courses toward the Minor Concentration and 5 more elective courses towards the Major Concentration for a total of 11 Lecture Courses, i.e., a minimum of 33 credits of post-baccalaureate coursework taken at Pitt (2XXX level or
higher) or transferred in from post-baccalaureate study. The coursework should be comprised of didactic ("book") courses and not include seminar or research courses.

- Up to 30 credits may be applied to the Major Concentration and/or Minor Concentration from previously completed post-baccalaureate study.

- A minor area of concentration can be within any approved coherent area of science or engineering at the University of Pittsburgh outside of CEE.

- Doctoral Research (CEE 3997 - RESEARCH, PH.D) may only be taken following successful completion of the PhD Preliminary Exam.

- At least 12 credits of the Dissertation credit may be taken as Doctor Dissertation (CEE 3999 - PH.D. DISSERTATION) which may only be taken following successful completion of the PhD Dissertation Proposal Exam. Remaining Dissertation credit may be taken as Doctor Research CEE 3997 - RESEARCH, PH.D or Doctoral Dissertation.

- All students must enroll in the departmental seminar (CEE 2085 - GRADUATE DEPARTMENTAL SEMINAR) every semester of full-time residency (i.e., full-time study in the PhD program).

**Additional Information**

**Plan of Study**

The PhD Plan of Study is prepared by the student with the aid of the student's faculty advisor during the student's first two terms of graduate study. It should be approved and signed by the faculty advisor, all other faculty members in the program area, the graduate coordinator, and the department chair. Copies should be made available to the student, the faculty advisor, and the academic coordinator. Any change in the Plan of Study must be approved by the faculty advisor and the academic coordinator, and should likewise be recorded.

**PhD Examination Structure**

All PhD candidates must pass the preliminary, comprehensive, and final oral examinations:

**Preliminary Examination**

The purpose of this examination is to determine the student's potential to complete the PhD program. It is organized by the advisor and faculty from the student's program area, before or sometime during the first two terms of the program.

**Comprehensive Examination**

All PhD students must take this examination toward the end of their coursework. Students must submit a written proposal of their expected dissertation research and pass a presentation and comprehensive oral examination administered by the student's doctoral committee. The comprehensive examination committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering. The written proposal is recommended to be in the format of a standard federal research proposal (e.g., National Science Foundation) in terms of length, formatting, and technical content. A student must have a cumulative GPA of 3.0/4.0 or higher to be allowed to participate in the examination. The examination can be administered no sooner than 1 term (i.e., 4 months) following completion of the Preliminary Exam and no later than 2 terms (i.e., 8 months) prior to the Dissertation Defense.

**Final Oral Examination**
This is an oral defense of the student's PhD dissertation. The examination will be administered by the doctoral committee. The doctoral committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering.

Civil and Environmental Engineering - Sustainability and Environmental Engineering - Water Resources Engineering Specialty, PhD

Requirements

http://www.engineering.pitt.edu/Departments/Civil-Environmental/_Content/Graduate/Civil-Graduate-Programs/

Students pursuing the PhD must complete a minimum of 72 credits, including the following:

- 24 course credits (8 courses) in major area
- 15 additional course or special investigation credits in major area
- 9 course credits (three courses) in minor area
- 18 credits of dissertation research

The total number of credits above these minimum requirements will depend on the student's background, academic achievement, and dissertation topic. This decision will be made in consultation with the major advisor.

- All PhD students must complete CEE 2612 - DESIGN AND ANALYSIS OF EXPERIMENTS as part of their Major Concentration Coursework.
- Students must also complete 2 courses from the following 3 options (or equivalent*) as part of their Major Concentration Coursework:
  - CEE 2502 - PHYSICAL-CHEMICAL PRINCIPLES IN ENVIRONMENTAL ENGINEERING
  - CEE 3408 - ADVANCED ENVIRONMENTAL FLUID MECHANICS OR CEE 3414 - ADVANCED HYDROLOGY
  - CEE 3609 - ADVANCED TOPICS IN LIFE CYCLE ASSESSMENT

* Courses can be accepted as "equivalent" with prior approval by both the student's academic advisor and the academic coordinator.

In addition to the 3 required courses, each student must complete 3 courses toward the Minor Concentration and 5 more elective courses towards the Major Concentration for a total of 11 Lecture Courses, i.e., a minimum of 33 credits of post-baccalaureate coursework taken at Pitt (2XXX level or higher) or transferred in from post-baccalaureate study. The coursework should be comprised of didactic ("book") courses and not include seminar or research courses.

- Up to 30 credits may be applied to the Major Concentration and/or Minor Concentration from previously completed post-baccalaureate study.
- A minor area of concentration can be within any approved coherent area of science or engineering at the University of Pittsburgh outside of CEE.
- Doctoral Research (CEE 3997 - RESEARCH, PH.D) may only be taken following successful completion of the PhD Preliminary Exam.
- At least 12 credits of the Dissertation credit may be taken as Doctor Dissertation (CEE 3999 - PH.D. DISSERTATION) which may only be taken following successful completion of the PhD Dissertation Proposal Exam. Remaining Dissertation credit may be taken as Doctor Research CEE 3997 - RESEARCH, PH.D or Doctoral Dissertation.
- All students must enroll in the departmental seminar (CEE 2085 - GRADUATE DEPARTMENTAL SEMINAR) every semester of full-time residency (i.e., full-time study in the PhD program).

Additional Information

Plan of Study

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The PhD Plan of Study is prepared by the student with the aid of the student's faculty advisor during the student's first two terms of graduate study. It should be approved and signed by the faculty advisor, all other faculty members in the program area, the graduate coordinator, and the department chair. Copies should be made available to the student, the faculty advisor, and the academic coordinator. Any change in the Plan of Study must be approved by the faculty advisor and the academic coordinator, and should likewise be recorded.

**PhD Examination Structure**

All PhD candidates must pass the preliminary, comprehensive, and final oral examinations:

**Preliminary Examination**

The purpose of this examination is to determine the student's potential to complete the PhD program. It is organized by the advisor and faculty from the student's program area, before or sometime during the first two terms of the program.

**Comprehensive Examination**

All PhD students must take this examination toward the end of their course work. Students must submit a written proposal of their expected dissertation research and pass a presentation and comprehensive oral examination administered by the student's doctoral committee. The comprehensive examination committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering. The written proposal is recommended to be in the format of a standard federal research proposal (e.g., National Science Foundation) in terms of length, formatting, and technical content. A student must have a cumulative GPA of 3.0/4.0 or higher to be allowed to participate in the examination. The examination can be administered no sooner than 1 term (i.e., 4 months) following completion of the Preliminary Exam and no later than 2 terms (i.e., 8 months) prior to the Dissertation Defense.

**Final Oral Examination**

This is an oral defense of the student's PhD dissertation. The examination will be administered by the doctoral committee. The doctoral committee will consist of the major advisor as chair, at least two faculty members from the student's program area within the Department of Civil and Environmental Engineering, and at least one faculty member from outside the Department of Civil and Environmental Engineering.

**Civil Engineering/Mathematics, MSCE/MS**

The general requirements for the two options for the Master of Science in Civil and Environmental Engineering/Mathematics degree (thesis and professional) are detailed below:

- **Thesis Option:** 24 course credits (eight courses) minimum and thesis (6 credits), with comprehensive and final examinations.
- **Professional Option:** 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

**MS Final Examination**

Students pursuing the thesis and project MS options must take and pass both a comprehensive examination and a final oral examination.
Comprehensive Examination

This examination is given to all students during the last term of the program. It may be either an oral examination or, at the recommendation of the area faculty, a written examination. It is administered by an MS committee made up of the faculty advisor (as chair), plus a minimum of two other faculty members from fields related to the student's interest. If the result of the examination is unsatisfactory, subsequent action is at the discretion of the MS committee.

Final Oral Examination

The purpose of this examination is to evaluate the student's MS thesis or project and/or related course work. The examination is administered by the MS committee, chaired by the student's major advisor.

Civil and Environmental Engineering - Construction Management Area, MSCE

Requirements

The general requirements for the option for the Master of Science in Civil and Environmental Engineering - Construction Management Area degree (thesis and professional) are detailed below:

Thesis Option: 24 course credits (eight courses) minimum and thesis (6 credits), with thesis defense

Professional Option: 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

The detailed course requirements for the two degree options are as follows:

MS Thesis Degree Requirements

a) 3 credits - CEE 2201 - CONSTRUCTION COST ENGINEERING or Equivalent

b) 3 credits - CEE 2202 - CONSTRUCTION SCHEDULING or Equivalent

c) 3 credits - CEE 2203 - CONSTRCT METHODS AND EQUIPMENT or Equivalent

d) 3 credits - CEE 2204 - CONSTRUCTION LAW AND RISK MGMNT or Equivalent

e) 3 credits - CEE 2205 - CONSTRCT FINANCE & COST CONTROL or Equivalent

f) 3 credits - CEE 2206 - CONSTRCT & COST OF ELEC SUPPLY - OR - CEE 2207 - CONSTRCT & COST OF MECHL SYSTEMS or Equivalent

g) 6 credits - CEE 2999 - M.S. THESIS

Thesis Defense

Students pursuing the MS Thesis Option must pass an oral presentation and defense of their completed thesis, administered by the student's thesis committee. The committee shall be comprised of 3 or more members (including the student's graduate advisor). The chair of the committee and at least one other committee member must be appointed to the University of Pittsburgh Graduate Faculty.
**Professional MS Degree Requirements**

a) 3 credits - CEE 2201 - CONSTRUCTION COST ENGINEERING or Equivalent

b) 3 credits - CEE 2202 - CONSTRUCTION SCHEDULING or Equivalent

c) 3 credits - CEE 2203 - CONSTRUCT METHODS AND EQUIPMENT or Equivalent

d) 3 credits - CEE 2204 - CONSTRUCTION LAW AND RISK MGMNT or Equivalent

e) 3 credits - CEE 2205 - CONSTRUCT FINANCE & COST CONTROL or Equivalent

f) 3 credits - CEE 2206 - CONSTRCT & COST OF ELEC SUPPLY - OR - CEE 2207 - CONSTRCT & COST OF MECHL SYSTEMS or Equivalent

g) 12 credits - Graduate Technical Electives

Notes: Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count toward the degree program coursework requirements).

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**Civil and Environmental Engineering - Environmental Engineering Area, MSCE**

**Requirements**

The general requirements for the option for the Master of Science in Civil and Environmental Engineering - Environmental Engineering Area degree (thesis and professional) are detailed below:

**Thesis Option:** 24 course credits (eight courses) minimum and thesis (6 credits), with thesis defense

**Professional Option:** 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

The detailed course requirements for the two degree options are as follows:

**MS Thesis Degree Requirements**

a) 3 credits - CEE 2500 - ENVIRONMENTAL ENGINEERING MICROBIOL or Equivalent

b) 3 credits - CEE 2501 - ENVIRONMENTAL ENGINEERING CHEMISTRY or Equivalent

c) 3 credits - CEE 2502 - PHYSICAL-CHEMICAL PRINCIPLES IN ENVIRONMENTAL ENGINEERING or Equivalent

d) 3 credits - CEE 3501 - ENVIRONMENTAL ENGINEERING PROCESSES 1 or Equivalent
e) 3 credits - CEE 3502 - ENVIRONMENTAL ENGINEERING PROCESSES 2 or Equivalent

f) 9 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

g) 6 credits - MS Thesis CEE 2999 - M.S. THESIS

Thesis Defense

Students pursuing the MS Thesis Option must pass an oral presentation and defense of their completed thesis, administered by the student's thesis committee. The committee shall be comprised of 3 or more members (including the student's graduate advisor). The chair of the committee and at least one other committee member must be appointed to the University of Pittsburgh Graduate Faculty.

Professional MS Degree Requirements

a) 3 credits - CEE 2500 - ENVIRONMENTAL ENGINEERING MICROBOL or Equivalent

b) 3 credits - CEE 2501 - ENVIRONMENTAL ENGINEERING CHEMISTRY or Equivalent

c) 3 credits - CEE 2502 - PHYSICAL-CHEMICAL PRINCIPLES IN ENVIRONMENTAL ENGINEERING or Equivalent

d) 3 credits - CEE 3501 - ENVIRONMENTAL ENGINEERING PROCESSES 1 or Equivalent

e) 3 credits - CEE 3502 - ENVIRONMENTAL ENGINEERING PROCESSES 2 or Equivalent

f) 15 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

Civil and Environmental Engineering - Geotechnical Area, MSCE

Requirements

The general requirements for the option for the Master of Science in Civil and Environmental Engineering - Geotechnical Engineering Area degree (thesis and professional) are detailed below:

Thesis Option: 24 course credits (eight courses) minimum and thesis (6 credits), with thesis defense

Professional Option: 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

The detailed course requirements for the two degree options are as follows:

MS Thesis Degree Requirements

a) 3 credits - CEE 2800 - ENGINEERING GEOLOGY or Equivalent

b) 3 credits - CEE 2801 - ADVANCED SOIL MECHANICS or Equivalent
c) 3 credits - CEE 2802 - GEOTECHNICAL ANALYSIS or Equivalent

d) 3 credits - CEE 3805 - ROCK MECHANICS or Equivalent

e) 12 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

f) 6 credits - MS Thesis CEE 2999 - M.S. THESIS

**Thesis Defense**

Students pursuing the MS Thesis Option must pass an oral presentation and defense of their completed thesis, administered by the student's thesis committee. The committee shall be comprised of 3 or more members (including the student's graduate advisor). The chair of the committee and at least one other committee member must be appointed to the University of Pittsburgh Graduate Faculty.

**Professional MS Degree Requirements**

a) 3 credits - CEE 2800 - ENGINEERING GEOLOGY or Equivalent

b) 3 credits - CEE 2801 - ADVANCED SOIL MECHANICS or Equivalent

c) 3 credits - CEE 2802 - GEOTECHNICAL ANALYSIS or Equivalent

d) 3 credits - CEE 3805 - ROCK MECHANICS or Equivalent

e) 18 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

**Civil and Environmental Engineering - Pavement Engineering Area, MSCE**

**Requirements**

The general requirements for the option for the Master of Science in Civil and Environmental Engineering - Pavement Engineering Area degree (thesis and professional) are detailed below:

**Thesis Option:** 24 course credits (eight courses) minimum and thesis (6 credits), with thesis defense

**Professional Option:** 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

The detailed course requirements for the two degree options are as follows:

**MS Thesis Degree Requirements**

a) 3 credits - CEE 2714 - PAVEMENT DESIGN AND ANALYSIS or Equivalent
b) 3 credits - CEE 2715 - PAVEMENT MAINTENANCE AND REHAB or Equivalent

c) 3 credits - CEE 2717 - COMPONENTS, PROPERTIES AND DESIGN OF PORTLAND CEMENT CONCRETE or Equivalent -- OR -- CEE 2718 - ADVANCED CONSTRUCTION AND BITUMINOUS MATERIALS or Equivalent

d) 3 credits - CEE 3714 - ADVANCED PAVEMENT DESIGN & ANAL or Equivalent

e) 12 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

f) 6 credits - MS Thesis CEE 2999 - M.S. THESIS

Thesis Defense

Students pursuing the MS Thesis Option must pass an oral presentation and defense of their completed thesis, administered by the student's thesis committee. The committee shall be comprised of 3 or more members (including the student's graduate advisor). The chair of the committee and at least one other committee member must be appointed to the University of Pittsburgh Graduate Faculty.

Professional MS Degree Requirements

a) 3 credits - CEE 2714 - PAVEMENT DESIGN AND ANALYSIS or Equivalent

b) 3 credits - CEE 2715 - PAVEMENT MAINTENANCE AND REHAB or Equivalent

c) 3 credits - CEE 2717 - COMPONENTS, PROPERTIES AND DESIGN OF PORTLAND CEMENT CONCRETE or Equivalent -- OR -- CEE 2718 - ADVANCED CONSTRUCTION AND BITUMINOUS MATERIALS or Equivalent

d) 3 credits - CEE 3714 - ADVANCED PAVEMENT DESIGN & ANAL or Equivalent

e) 18 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

Civil and Environmental Engineering - Structural Engineering and Mechanics Area, MSCE

Requirements

The general requirements for the option for the Master of Science in Civil and Environmental Engineering - Structural Engineering and Mechanics Area degree (thesis and professional) are detailed below:

Thesis Option: 24 course credits (eight courses) minimum and thesis (6 credits), with thesis defense

Professional Option: 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

The detailed course requirements for the two degree options are as follows:
MS Thesis Degree Requirements

a) 3 credits - CEE 2320 - ADVANCED MECHANICS OF MATERIALS or CEE 2321 - ELASTICITY, PLASTICITY AND FRACTURE MECHANICS

b) 3 credits - CEE 2333 - INTRODUCTION TO FINITE ELEMENTS or Equivalent

c) 3 credits - SEM Graduate Design Elective CEE 2340 - CONCRETE STRUCTURES 2, CEE 2341 - STEEL STRUCTURES 2, CEE 2343 - PRESTRESSED CONCRETE, CEE 2346 - REPAIR AND RETROFIT OF STRUCTURES or CEE 2347 - BRIDGE ENGINEERING

d) 6 credits - SEM Graduate Technical Elective CEE 2330 - ADVANCED STRUCTURAL ANALYSIS, CEE 2343 - PRESTRESSED CONCRETE, CEE 2347 - BRIDGE ENGINEERING, CEE 2360 - DYNAMICS OF STRUCTURES, CEE 2370 - INTRODUCTION TO NONDESTRUCTIVE EVALUATION AND STRUCTURAL HEALTH MONITORING, CEE 3330 - STRUCTURAL STABILITY, or CEE 3333 - ADVANCED FINITE ELEMENT METHODS

Note: CEE 2330 - ADVANCED STRUCTURAL ANALYSIS may not be taken for graduate credit if the student's undergraduate program includes an equivalent course.

e) 9 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

f) 6 credits - MS Thesis CEE 2999 - M.S. THESIS

Thesis Defense

Students pursuing the MS Thesis Option must pass an oral presentation and defense of their completed thesis, administered by the student's thesis committee. The committee shall be comprised of 3 or more members (including the student's graduate advisor). The chair of the committee and at least one other committee member must be appointed to the University of Pittsburgh Graduate Faculty.

Professional MS Degree Requirements

a) 3 credits - CEE 2320 - ADVANCED MECHANICS OF MATERIALS or CEE 2321 - ELASTICITY, PLASTICITY AND FRACTURE MECHANICS

b) 3 credits - CEE 2333 - INTRODUCTION TO FINITE ELEMENTS or Equivalent

c) 3 credits - SEM Graduate Design Elective CEE 2340 - CONCRETE STRUCTURES 2, CEE 2341 - STEEL STRUCTURES 2, CEE 2343 - PRESTRESSED CONCRETE, CEE 2346 - REPAIR AND RETROFIT OF STRUCTURES or CEE 2347 - BRIDGE ENGINEERING

d) 6 credits - SEM Graduate Technical Elective CEE 2330 - ADVANCED STRUCTURAL ANALYSIS, CEE 2343 - PRESTRESSED CONCRETE, CEE 2347 - BRIDGE ENGINEERING, CEE 2360 - DYNAMICS OF STRUCTURES, CEE 2370 - INTRODUCTION TO NONDESTRUCTIVE EVALUATION AND STRUCTURAL HEALTH MONITORING, CEE 3330 - STRUCTURAL STABILITY, or CEE 3333 - ADVANCED FINITE ELEMENT METHODS

Note: CEE 2330 - ADVANCED STRUCTURAL ANALYSIS may not be taken for graduate credit if the student's undergraduate program includes an equivalent course.

e) 15 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

Civil and Environmental Engineering - Sustainable Engineering Area, MSCE
Requirements

The general requirements for the option for the Master of Science in Civil and Environmental Engineering - Sustainable Engineering Area degree (thesis and professional) are detailed below:

Thesis Option: 24 course credits (eight courses) minimum and thesis (6 credits), with thesis defense

Professional Option: 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

The detailed course requirements for the two degree options are as follows:

**MS Thesis Degree Requirements**

a) 3 credits - CEE 2609 - LIFE CYCLE ASSESSMENT METHODS AND TOOLS or Equivalent

b) 3 credits - CEE 2610 - ENGINEERING AND SUSTAINABLE DEVELOPMENT or Equivalent

c) 3 credits - CEE 2620 - ADVANCED GREEN BUILDING AND CONSTRUCTION or Equivalent

d) 15 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

f) 6 credits - MS Thesis CEE 2999 - M.S. THESIS

**Thesis Defense**

Students pursuing the MS Thesis Option must pass an oral presentation and defense of their completed thesis, administered by the student's thesis committee. The committee shall be comprised of 3 or more members (including the student's graduate advisor). The chair of the committee and at least one other committee member must be appointed to the University of Pittsburgh Graduate Faculty.

**Professional MS Degree Requirements**

a) 3 credits - CEE 2609 - LIFE CYCLE ASSESSMENT METHODS AND TOOLS or Equivalent

b) 3 credits - CEE 2610 - ENGINEERING AND SUSTAINABLE DEVELOPMENT or Equivalent

c) 3 credits - CEE 2620 - ADVANCED GREEN BUILDING AND CONSTRUCTION or Equivalent

d) 21 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

**Civil and Environmental Engineering - Transportation Engineering Area, MSCE**
Requirements

The general requirements for the option for the Master of Science in Civil and Environmental Engineering - Transportation Engineering Area degree (thesis and professional) are detailed below:

Thesis Option: 24 course credits (eight courses) minimum and thesis (6 credits), with thesis defense

Professional Option: 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

The detailed course requirements for the two degree options are as follows:

MS Thesis Degree Requirements

a) 3 credits - CEE 2700 - TRAFFIC MGMNT AND OPERATIONS or Equivalent
b) 3 credits - CEE 2710 - TRAFFIC CONTROL SYSTEMS or Equivalent
c) 3 credits - CEE 2720 - URBAN TRANSPORTATION PLANNING or Equivalent
d) 3 credits - CEE 2714 - PAVEMENT DESIGN AND ANALYSIS or CEE 2730 - HIGHWAY ENGINEERING or Equivalent
e) 3 credits - CEE 2750 - PROJECT DEVELOPMENT AND IMPLEMENTATION
f) 9 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

g) 6 credits - MS Thesis CEE 2999 - M.S. THESIS

Thesis Defense

Students pursuing the MS Thesis Option must pass an oral presentation and defense of their completed thesis, administered by the student's thesis committee. The committee shall be comprised of 3 or more members (including the student's graduate advisor). The chair of the committee and at least one other committee member must be appointed to the University of Pittsburgh Graduate Faculty.

Professional MS Degree Requirements

a) 3 credits - CEE 2700 - TRAFFIC MGMNT AND OPERATIONS or Equivalent
b) 3 credits - CEE 2710 - TRAFFIC CONTROL SYSTEMS or Equivalent
c) 3 credits - CEE 2720 - URBAN TRANSPORTATION PLANNING or Equivalent
d) 3 credits - CEE 2714 - PAVEMENT DESIGN AND ANALYSIS or CEE 2730 - HIGHWAY ENGINEERING or Equivalent
e) 3 credits - CEE 2750 - PROJECT DEVELOPMENT AND IMPLEMENTATION
f) 15 credits - Graduate Technical Electives
Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

Civil and Environmental Engineering - Water Resources Engineering Area, MSCE

Requirements

The general requirements for the option for the Master of Science in Civil and Environmental Engineering - Water Resources Engineering Area degree (thesis and professional) are detailed below:

Thesis Option: 24 course credits (eight courses) minimum and thesis (6 credits), with thesis defense

Professional Option: 30 course credits (10 courses) minimum

Students supported as graduate research assistants and all students intending to continue for a PhD degree are required to pursue the thesis option. The professional option is not available to students supported as graduate research or teaching assistants.

The detailed course requirements for the two degree options are as follows:

MS Thesis Degree Requirements

a) 3 credits - CEE 3408 - ADVANCED ENVIRONMENTAL FLUID MECHANICS or Equivalent

b) 3 credits - CEE 3414 - ADVANCED HYDROLOGY or Equivalent

c) 3 credits from either CEE 2416 - SEDIMENT TRANSPORT or Equivalent -- OR -- CEE 3416 - RIVER MECHANICS AND MORPHODYNAMICS or Equivalent

d) 6 credits - WR Graduate Technical Electives (e.g. CEE 2401 - OPEN CHANNEL HYDRAULICS, CEE 2410 - WATER RESOURCES ENGINEERING)

e) 9 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

f) 6 credits - MS Thesis CEE 2999 - M.S. THESIS

Thesis Defense

Students pursuing the MS Thesis Option must pass an oral presentation and defense of their completed thesis, administered by the student's thesis committee. The committee shall be comprised of 3 or more members (including the student's graduate advisor). The chair of the committee and at least one other committee member must be appointed to the University of Pittsburgh Graduate Faculty.

Professional MS Degree Requirements

a) 3 credits - CEE 3408 - ADVANCED ENVIRONMENTAL FLUID MECHANICS or Equivalent

b) 3 credits - CEE 3414 - ADVANCED HYDROLOGY or Equivalent
c) 3 credits from either CEE 2416 - SEDIMENT TRANSPORT or Equivalent -- OR -- CEE 3416 - RIVER MECHANICS AND MORPHODYNAMICS or Equivalent

d) 6 credits - WR Graduate Technical Electives (e.g. CEE 2401 - OPEN CHANNEL HYDRAULICS, CEE 2410 - WATER RESOURCES ENGINEERING)

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

e) 15 credits - Graduate Technical Electives

Graduate Technical Electives may include any advisor-approved program-related graduate course (i.e., course numbers 2XXX or 3XXX), including guided special investigations (CEE 2996; although no more than six credits of CEE 2996 may count towards the degree program coursework requirements).

Civil and Environmental Engineering - Construction Management Certificate

The Construction Management Certificate Program is directed at Part-time students currently employed in the construction industry as well as other students interested in obtaining credentials in construction management.

The Academic Requirements associated with the Graduate and Post-Baccalaureate Certificate in Construction Management include the completion of fifteen (15) credits of coursework within the Civil and Environmental Department from among the following Graduate Level courses:

- CEE 2201 - CONSTRUCTION COST ENGINEERING*
- CEE 2202 - CONSTRUCTION SCHEDULING*
- CEE 2203 - CONSTRUCT METHODS AND EQUIPMENT*
- CEE 2204 - CONSTRUCTION LAW AND RISK MGMNT
- CEE 2205 - CONSTRCT FINANCE & COST CONTROL
- CEE 2206 - CONSTRCT & COST OF ELEC SUPPLY
- CEE 2207 - CONSTRCT & COST OF MECHL SYSTEMS
- CEE 2230 - BUILDING INFORMATION MODELING

Students must complete three (3) required courses above (designated with an asterisk *) and may select any two (2) of the remaining courses above as electives in the completion of their Certificate. Additional graduate level courses within the Swanson School of Engineering may be considered as substitutes for the two (2) elective courses with permission of the Program Director to customize the Certificate to meet the educational goals of the student. All courses can be taken either on campus or online.

Department of Electrical and Computer Engineering

Contact Information

Department Chair: Alan D. George  
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412-624-8002  
Fax: 412-624-8003  
E-mail: ecemain@pitt.edu  
http://www.engineering.pitt.edu/ECE/

Additional information concerning the Electrical Engineering graduate program may be obtained from Sandy Weisberg, Electrical Engineering Program Administrator while information concerning the Computer Engineering graduate program may be obtained from Dre' Aliquo-Varela, Computer Engineering Graduate Program Administrator. Both Ms. Weisberg and Ms. Aliquo-Varela are located at 1238 Benedum Hall, 3700 O'Hara Street, Pittsburgh, PA 15261. Alternately, you may contact them via phone at 412-642-8001, fax at 412-624-8003, or email ecemain@pitt.edu.
Graduate Degree Programs

The Department of Electrical and Computer Engineering offers a program of graduate study and research for master's and doctoral degree students whose career choice is oriented toward basic or applied research in industry, government, or academic institutions. Degrees awarded are the Master of Science in Electrical Engineering, the Master of Science in Computer Engineering, the Doctor of Philosophy in Electrical Engineering, and the Doctor of Philosophy in Computer Engineering. The MSCE and PhD in Computer Engineering are jointly offered with the Department of Computer Science. Course work and faculty/student research in the graduate Electrical Engineering program are concentrated in the following four areas:

- Computer Engineering
- Optical and Electronic Devices
- Electric Power Engineering
- Signal Processing and Systems

and include research in computer architecture, computer-aided design (CAD), very-large-scale integrated (VLSI) design, optical interfacing, embedded systems, parallel processing architectures, networking, photonic and electronic devices, micro/nanorobotics and systems, fiber optics, ultrafast laser processing, nanowires and nanoparticles, semiconductor device modeling and characterization, power electronics, pattern recognition, biomedical image processing, speech processing, statistical signal processing, wavelets, intelligent and neutral control, human-centered control, networked control, radio-frequency identification (RFID) and tags, electric power systems analysis, simulation and modeling: transmission, distribution systems and technologies, real-time control of power systems, and renewable energy interconnections, and smart grid.

Graduate Admissions

http://www.engineering.pitt.edu/Departments/Electrical-Computer/_Content/Graduate/Electrical-and-Computer-Engineering-Graduate-Admissions/

Applicants for admission must submit transcripts of all college-level work, two letters of recommendation, and scores on the verbal, quantitative, and writing assessment-analytical sections of the Graduate Record Examination. International applicants whose first language is not English are required to submit the TOEFL administered by the Educational Testing Service with a minimum score of 80 (internet-based test). For awards consideration, applications must be completed by February 1.

Financial Aid

The Department of Electrical and Computer Engineering offers graduate students support in a variety of ways. Many full-time students are supported by graduate research assistantships or teaching assistantships. There are also several fellowships available for highly qualified graduate students.

Graduate Regulations

In addition to the general regulations of the Swanson School of Engineering, the electrical and computer engineering department has the following requirements:

Computer Engineering, PhD

Requirements

http://www.engineering.pitt.edu/ComputerEngineering/GraduateProgram/

The PhD degree in computer engineering requires at least 72 credits. These credits must include the following categories:

Four core courses required (12 credits minimum). Each student must complete at least one course chosen from each of the following three areas, and one additional course from any one of these areas.
Computer Architecture

- CS 2410 - COMPUTER ARCHITECTURE or
- EE 2410 - Computer Architecture
- EE 2162 - Computer Architecture

Software Systems

- CS 2210 - COMPILER DESIGN or
- EE 2210 - Compiler Design
- CS 2510 - COMPUTER OPERATING SYSTEMS or
- EE 2510 - Computer Operating Systems
- CS 2310 - SOFTWARE ENGINEERING or
- EE 2310 - Software Engineering
- EE 2186 - Software Engineering

Hardware Systems

- EE 2160 - Embedded Systems
- EE 2192 - Introduction to VLSI Design
- EE 2120 - Hardware Design Methodologies

Additional Requirements

Nine courses (27 credits minimum) must be chosen from the list of CoE graduate courses, or from pre-approved CS or EE courses not cross-listed as CoE courses.

1. Seven courses (21 credits minimum) are elective and may be CS, EE, or CoE courses, courses from other disciplines, or research project courses (2998).
2. The specific program of study should be approved in advance by the Student's Research Committee (described below).
3. Dissertation (12-18 credits)

Examinations: Each student must pass the following examinations:

Preliminary Examination

This is an oral examination conducted by the Student's Research Committee. The Master of Science Thesis Oral Examination will satisfy the Preliminary Examination requirements.

Comprehensive Examination

To complete the comprehensive examination, a student must satisfy both the following requirements not later than two years after entering the program:
Complete a total of five courses with a grade of A- or better. These courses must be taken from either the Core Requirements listed above or the CoE Elective categories and

- Complete the four courses that satisfy the Core Requirements category above with a grade of B or better.

The particular of mix of five courses in part 1 can be any combination of core or elective courses. However, any core course requirement that is not included in the five must be completed with a B or better in order to satisfy part 2.

Dissertation Proposal

Within five years, students must present their plan for dissertation research to be approved by the Student's Research Committee. This is after the student has completed all other PhD requirements.

Dissertation Defense

Student must orally defend their dissertation research to be approved by the Student's Research Committee, the time between the dissertation proposal and the defense has to be at least eight months.

Composition and Role of the Student's Research Committee

The Student's Research Committee will consist of a primary advisor and at least three graduate faculty members from the Computer Engineering Graduate Faculty.

The Student's Research Committee has two responsibilities: the approval of the program of study and the oversight of the dissertation research. At least one member of the committee must be from a department other than the advisor or co-advisors if the co-advisors are from the same department. One additional member must be a member of the graduate faculty who is not a member of the CoE Graduate Faculty.

Electrical & Computer Engineering, PhD

Electrical Engineering, PhD

http://www.engineering.pitt.edu/ECE/Graduate/Electrical/Programs/

A student showing unusual proficiency in graduate course work and independent research will be recommended for doctoral study. The objective of the PhD program in electrical engineering is to attain a high degree of competence in one major field, as well as some understanding of a minor or cognate field. A minimum of 72 credits beyond the BS degree is required, including 18 credits of dissertation work. In addition to the general regulations, the department has specific requirements as described below:

PhD Preliminary Evaluation

This is an oral and written presentation on a subject mutually agreed upon by the student and the advisor in the field of the student's interest. The examination is to demonstrate the student's initiative and ability to do independent work.

Program Conference

During the first year of registration in the PhD program, the student must meet with a faculty committee and present a program of study for its approval. The committee consists of the student's faculty advisor, who chairs the committee, and two other faculty members from the department.
PhD Comprehensive Examination

To complete the Comprehensive PhD exam, a student must obtain a minimum GPA of 3.3 in the four courses assigned by the PhD program conference committee no later than the first two years of enrollment in the PhD program. If the student fails to achieve this requirement, he/she must pass an oral exam that takes place at the same time as the PhD Proposal exam and answer general questions related to his/her research area. If he/she fails this oral exam, the student may take it once more three months later.

PhD Proposal Examination

In this examination, the student presents and defends a proposal for dissertation work to a doctoral committee consisting of at least five members, four of whom must be graduate faculty, with one from outside the Electrical and Computer Engineering Department.

PhD Final Oral Examination

In this examination, administered by the doctoral committee, the student defends the validity of the dissertation and the contributions that are made in the work. Results from the dissertation must be submitted to a refereed journal for publication.

Electrical & Computer Engineering, MBA/MSE

Electrical Engineering/Business Administration, MSEE/MBA

The program consists of 64.5 credits for full-time students or 69 credits for part-time students and leads to a Master of Business Administration (MBA) and a Master of Science in Electrical Engineering (MSEE). The joint full-time program requires students to take 39 credits minimum of business and 25.5 credits minimum in electrical and computer engineering. The full-time option can be completed in two academic years whereas the part-time option may require a period of four to five years. The program is only for those students seeking a professional MS Engineering degree. Detailed information may be located at http://www.engineering.pitt.edu/ECE/Graduate/Electrical/Programs/

Computer Engineering, MSCOE

http://www.engineering.pitt.edu/ComputerEngineering/GraduateProgram/

The Computer Engineering Program graduate degrees are offered jointly with the Department of Computer Science. Students in the program come from both departments. For more information on the program see http://engineering.pitt.edu/ComputerEngineering/GraduateProgram/.

It is not the intention that students will be admitted to the program as terminal MS students. Instead, this degree is designed as a "milepost" in the program of study for a student pursuing a PhD.

This degree requires at least 30 credits, and includes eight courses or project courses, and six thesis credits. These fall into the following categories:

Requirements

Four core courses required (12 credits minimum)-Each student must complete at least one course chosen from each of the following three areas, and one additional course from any one of these areas.

Computer Architecture

- CS 2410 - COMPUTER ARCHITECTURE
Software Systems

- CS 2210 - COMPILER DESIGN
- CS 2510 - COMPUTER OPERATING SYSTEMS
- CS 2310 - SOFTWARE ENGINEERING

Hardware Systems

- ECE 2160 - EMBEDDED COMPUTER SYSTEM DESIGN
- ECE 2192 - INTRODUCTION TO VLSI DESIGN
- ECE 2120 - HARDWARE DESIGN METHODOLOGIES 1

Additional Requirements

Four courses (12 credits minimum) must be chosen from the list of CoE graduate courses, or from pre-approved CS or ECE courses. One of these four courses may also be a research project course (2998).

Master's Thesis (6 credits): Each student must write and defend a master's thesis. The thesis should be an in-depth investigation of a research topic in computer engineering. This requirement also includes the submission of a paper to a refereed conference or journal.

Electrical & Computer Engineering, MS

Electrical and Computer Engineering - Professional Track - Computer Engineering Concentration, MSEE

Degree Requirements

http://www.engineering.pitt.edu/ECE/Graduate/Electrical/Programs/

The Master of Science degree has both research and professional tracks. The research track provides the student the opportunity to work on a thesis (applied or basic in nature) under the close supervision of a faculty advisor. The minimum requirements for the research track are 24 credits of graduate course work and preparation and defense of a thesis (6 credits) on a topic in the student's primary area of interest. For the professional option, the minimum requirement is 30 credits of graduate course work.

Course selection for either the research or the professional tracks is developed by the student in consultation with the student's advisor and following guidelines set by the department. The course plan may include courses in and outside of the Department of Electrical and Computer Engineering. A list of courses is available to MS students and can be found at http://engineering.pitt.edu/ECE/Graduate/Electrical/Programs/

Electrical and Computer Engineering - Professional Track - Electric Power Systems/Signal Processing and Systems Concentration, MSEE

Degree Requirements

http://www.engineering.pitt.edu/ECE/Graduate/Electrical/Programs/
The Master of Science degree has both research and professional tracks. The research track provides the student the opportunity to work on a thesis (applied or basic in nature) under the close supervision of a faculty advisor. The minimum requirements for the research track are 24 credits of graduate course work and preparation and defense of a thesis (6 credits) on a topic in the student's primary area of interest. For the professional option, the minimum requirement is 30 credits of graduate course work.

Course selection for either the research or the professional tracks is developed by the student in consultation with the student's advisor and following guidelines set by the department. The course plan may include courses in and outside of the Department of Electrical and Computer Engineering. A list of courses is available to MS students and can be found at http://engineering.pitt.edu/ECE/Graduate/Electrical/Programs/

**Electrical and Computer Engineering - Professional Track - Optical and Electronic Devices Concentration, MSEE**

Degree Requirements

http://www.engineering.pitt.edu/ECE/Graduate/Electrical/Programs/

**Electrical and Computer Engineering - Research Track - Electric Power Systems/Signal Processing and Systems Concentration, MSEE**

Degree Requirements

http://www.engineering.pitt.edu/ECE/Graduate/Electrical/Programs/

**Electrical and Computer Engineering - Research Track - Optical and Electronic Devices Concentration, MSEE**

Degree Requirements

http://www.engineering.pitt.edu/ECE/Graduate/Electrical/Programs/
The Master of Science degree has both research and professional tracks. The research track provides the student the opportunity to work on a thesis (applied or basic in nature) under the close supervision of a faculty advisor. The minimum requirements for the research track are 24 credits of graduate course work and preparation and defense of a thesis (6 credits) on a topic in the student's primary area of interest. For the professional option, the minimum requirement is 30 credits of graduate course work.

Course selection for either the research or the professional tracks is developed by the student in consultation with the student's advisor and following guidelines set by the department. The course plan may include courses in and outside of the Department of Electrical and Computer Engineering. A list of courses is available to MS students and can be found at http://engineering.pitt.edu/ECE/Graduate/Electrical/Programs/

**Electric Power Engineering Certificate**

- Via Synchronous, Interactive, Distance-Enabled Delivery

The University of Pittsburgh Swanson School of Engineering has established an Electric Power Engineering Post-Baccalaureate/Graduate Certificate Program that rises to the challenge of meeting the nation's critical development needs for electrical energy professionals. This is the only distance enabled program in electric power engineering that allows students to attend classroom lectures in real time, and also allows synchronous participation remotely via the Internet.

The program is deeply rooted in core electric power engineering principles and focuses on the expansion and enhanced reliability of electric power grid infrastructure through application of power electronics and advanced control technologies, as well as renewable energy integration and smart grids. Program content - combined with innovative distance-enabled delivery and collaborative program components - makes this program an attractive and unique choice in graduate engineering, particularly for individuals in industry/business. For additional information and to apply: www.engineering.pitt.edu/powercertificate

http://www.engineering.pitt.edu/App_shared/GainfulEmployCert/electric/Gainful_Employment_Disclosure.html

**Certificate Curriculum**

Credit-hours required: 15

Students may select any five of the following courses:

- ECE 2774 - POWER SYSTEMS ANALYSIS 2 *
- ECE 2777 - POWER SYSTEMS TRANSIENTS 1 *
- ECE 2250 - POWER ELECTRONICS *
- ECE 2646 - LINEAR SYSTEM THEORY
- ECE 2795 - SPECIAL TOPICS POWER Renewable & Alternative Energy Systems
- ECE 2795 - SPECIAL TOPICS POWER Smart Grid Technologies and Applications
- ECE 2795 - SPECIAL TOPICS POWER Advanced Power Electronics: FACTS & HVDC Technologies

**Note:**

*prerequisite required

**Additional Information**

**Admission Requirements**

- BS in electrical engineering from an ABET-accredited university program (no industry experience required) OR
- BS in any engineering field, PLUS a minimum of three years of power industry experience
- Completed application via Apply Yourself, Pitt's online application portal
At least two references preferred
No GRE required
Applications and references will be reviewed by the program director prior to admission
Click here to download our Electric Power Engineering Certificate informational one-sheet.

https://www.youtube.com/watch?v=OPinGSYS6VI

For more information about the Electric Power Engineering program, contact:

Gregory Reed, PhD, Program Director
Director, Electric Power Initiative
Director, Center for Energy
Professor, Electrical & Computer Engineering
Email

For more information about this and other distance-enabled learning programs at the Swanson School, contact:

Janet L. Littrell, EdD
Director of Distance Learning
Swanson School of Engineering
Email

Electric Power Engineering Post-Baccalaureate/Graduate Certificate

The University of Pittsburgh Swanson School of Engineering has established an Electric Power Engineering Post-Baccalaureate/Graduate Certificate Program that rises to the challenge of meeting the nation's critical development needs for electrical energy professionals. This is the only distance-enabled program in electric power engineering that allows students to attend classroom lectures in real time, and also allows synchronous participation remotely via the Internet.

The program is deeply rooted in core electric power engineering principles and focuses on the expansion and enhanced reliability of electric power grid infrastructure through application of power electronics and advanced control technologies, as well as renewable energy integration and smart grids. Program content - combined with innovative distance-enabled delivery and collaborative program components - makes this program an attractive and unique choice in graduate engineering, particularly for individuals in industry and business.

Gainful Employment Disclosure

Certificate Curriculum

Credit-hours required: 15

Students may select any five of the following courses:

- ECE 2774 - POWER SYSTEMS ANALYSIS 2 *
- ECE 2777 - POWER SYSTEMS TRANSIENTS 1 *
- ECE 2250 - POWER ELECTRONICS *
- ECE 2646 - LINEAR SYSTEM THEORY
- ECE 2795 - SPECIAL TOPICS POWER Renewable & Alternative Energy Systems
Note:

*prerequisite required

Additional Information

Admission Requirements

- BS in electrical engineering from an ABET-accredited university program (no industry experience required) OR
- BS in any engineering field, PLUS a minimum of three years of power industry experience
- Completed application via Apply Yourself, Pitt's online application portal
- At least two references preferred
- No GRE required
- Applications and references will be reviewed by the program director prior to admission

Click here to download our Electric Power Engineering Certificate informational one-sheet.

https://www.youtube.com/watch?v=OPinGSYS6VI

For more information about the Electric Power Engineering program, contact:

Gregory Reed, PhD, Program Director
Director, Electric Power Initiative
Director, Center for Energy
Professor, Electrical & Computer Engineering
Email

For more information about this and other distance-enabled learning programs at the Swanson School, contact:

Janet L. Littrell, EdD
Director of Distance Learning
Swanson School of Engineering
Email

Department of Industrial Engineering

Contact Information

Department Chair: Bopaya Bidanda
Main Office: 1025 Benedum Hall
412-624-9830
**Graduate Degree Programs**

The Department of Industrial Engineering's graduate programs prepare engineers to assume leadership positions in industry, government, and service organizations. With the Master of Science in Industrial Engineering, a student's program could be broad or specialized depending on his/her interests. The department provides several areas of concentration, including:

- Operations Research and Analytics
- Product Development and Manufacturing Systems
- Engineering Management and Assessment

In addition, the department also offers a dual degree (MSIE/MBA) program in cooperation with the Joseph M. Katz Graduate School of Business, and several options with the Master's program including (1) a Graduate Certificate in Safety Engineering, (2) opportunities for Lean Six Sigma Certification, (3) a Graduate Certificate in Healthcare Systems Engineering in cooperation with the Graduate School of Public Health, and (4) a Graduate Certificate in Nuclear Engineering in cooperation with the Department of Mechanical Engineering and Materials Science.

The Doctor of Philosophy degree is the department's flagship graduate program. Currently, the primary areas of research include all aspects of operations research, manufacturing science and nontraditional manufacturing, and supply chains. Doctoral graduates are qualified for academic research careers as well as technical leadership positions in industry.

**Admissions**

Applicants must possess an undergraduate or graduate degree from an ABET-accredited program in any engineering discipline, or a degree in a complementary technical discipline, such as mathematics, physics, or computer science. The department also requires undergraduate knowledge of calculus-based probability and statistics, calculus, linear algebra, and proficiency in computer programming.

Applicants for admission must submit the application form and fee, transcripts of all college-level work, three letters of recommendation, and a statement of career goals/objectives. International applicants to the full-time Masters program and all applicants to the PhD program must also submit scores on the verbal, quantitative, and writing assessment-analytical sections of the Graduate Record Examination (GRE). Applicants to the part-time master's program are generally not required to take the GRE. International applicants whose first language is not English must take the TOEFL administered by the Educational Testing Service with a minimum score of 550 (paper-based test)/213 (computer-based test)/ 80 (internet-based test). It is desirable for PhD applicants to have an interview with a faculty member, although this is not a requirement for admission.

Domestic applicants are considered on a rolling basis, while deadlines for international applicants are as follows: fall term - April 1 and spring term - July 1. International applicants are not accepted for enrollment beginning in a summer term. Prospective students are encouraged to apply early whenever possible.

Applications may also be completed online by going to [http://www.engineering.pitt.edu/Departments/Industrial/Admissions/](http://www.engineering.pitt.edu/Departments/Industrial/Admissions/)

Applicants to the MSIE-MBA program must apply through the Joseph M. Katz Graduate School of Business

**Financial Assistance**

It is the department's policy to provide graduate teaching or research assistantships to as many PhD students as possible. However, these awards are limited in number and highly competitive, and are awarded on the basis of merit and departmental research/teaching requirements. Financial support comes from the department, not individual faculty, and is generally restricted only to students interested in pursuing a doctoral degree. All decisions on assistantships are made by the chair based upon the recommendations of the departmental graduate committee. Barring unforeseen circumstances, students who are awarded financial support will have their financial support continued as long as they maintain their level of academic excellence.
and make satisfactory progress toward their degree objectives. For full consideration, students must apply early for financial support and in no case later than January 31 for the fall term and July 31 for the spring term.

Industrial Engineering, PhD

This is the department's flagship graduate program and prepares the student for the rigorous demands of a career in research and development, or academia. It requires a strong background in mathematics, probability theory, optimization techniques and manufacturing systems. The PhD student is expected to be a full-time student. Although it is possible to seek candidacy as a part-time student, the PhD candidate must spend at least one academic year on campus full time. The graduate faculty typically works closely with individual doctoral students to create a flexible program tailored to individual needs.

Entrance to the PhD Program: To be admitted to the doctoral program, students must pass the PhD qualifying examination. The student must seek faculty approval to take this examination, which is typically given once a year in late April or early May and encompasses (1) Operations Research, (2) Probability, (3) Statistics & Data Analysis, (4) Manufacturing Systems & Basic Industrial Engineering, and (5) either Stochastic Processes or Micro & Nano Manufacturing. A cumulative grade point average of 3.30 or better in graduate course work and formal faculty approval are required in order to be able to take the exam. The examination allows the department to assess the student's academic preparation and creative ability to conduct doctoral-level research. Students are expected to take the examination in April/May of the calendar year following the one in which they entered the graduate program, although it is acceptable to take the examination earlier.

Doctoral Course and Dissertation Credit Requirements: In addition to the basic core courses, doctoral students take additional courses that may be required in preparation for the PhD degree and the student's dissertation topic. These courses are selected in conjunction with a program approved by the student's advisor. According to University regulations, the PhD requires at least 72 credits beyond the bachelor's degree or 42 credits beyond the master's degree, including 18 credits for dissertation research. Currently, course credits typically include the following:

- IE 2000 (for students with non-IE undergraduate degree): 1 credit
- Other required courses (IE 2100, 2084, 2088): 9 credits
- Additional course work (at least 6 credits of which must come from offerings outside the Department of Industrial Engineering): 20-24 credits
- Dissertation research (IE 3997/IE 3999): at least 18 credits

Additional Doctoral Requirements: All full-time students must enroll in and attend IE 3095 (Graduate Seminar) each term they are in residence; the credits for these do not count toward the 72-credit requirement.

The comprehensive examination is taken by students after completing the course work in their concentration. The PhD comprehensive exam has a three-fold purpose: (1) to test the student's proficiency (knowledge and skills) in his or her major area of interest; (2) to identify deficiencies in the student's background and suggest remedial work; and (3) to test the student's ability to prepare an acceptable dissertation in his or her area of concentration.

All doctoral students are expected to pursue research by working with individual faculty in areas that can lead to a potential doctoral dissertation. A PhD candidate must demonstrate the ability to conduct research of original nature by completing a dissertation and preparing one or more papers of publishable quality. The dissertation topic is selected by the student in some theoretical or methodological area of interest in consultation with a faculty advisor. A faculty committee must approve the dissertation proposal before the student embarks on dissertation research. Information regarding the PhD program can be obtained by going to http://www.engineering.pitt.edu/Departments/Industrial/_Content/Graduate/Doctoral-Program/

Industrial Engineering/Business Administration, MSIE/MBA

This dual-degree program, offered in conjunction with the Joseph M. Katz Graduate School of Business, positions individuals with an undergraduate degree in engineering or the hard sciences to take a management role in a company that has a significant engineering and/or technological focus. Full-time students can complete both degrees in 20 months, while part-time students can do so in four years. Prospective students must apply via the Joseph M. Katz Graduate School of Business to the joint program; students who are already in the MBA program are not permitted to enroll in the joint program.
A total of 25.5-26.5 credits from the Department of Industrial Engineering are required (12-13 credits in core classes, 12 credits in electives, and 1.5 credits in an integrated project).

In particular these credits are divided as follows:

- **Required Core (2 courses: 6-7 credits)**
  - IE 2001 - OPERATIONS RESEARCH
  - IE 2006 - INTRO TO MANUFACTURING SYSTEMS
  - IE 2000 - FUNDAMNTLS OF INDUSTRIAL ENGR*

- **Elective Core: at least two of the following (2 courses: 6 credits)**
  - IE 2003 - ENGINEERING MANAGEMENT
  - IE 2004 - DATA BASE DESIGN
  - IE 2007 - STATISTICS AND DATA ANALYSIS
  - IE 2100 - SUPPLY CHAIN ANALYSIS

- **Free Electives (4 courses: 12 credits)**
  - Any elective offered by the IE Department (including courses in the elective core above)

*IE 2000 - FUNDAMNTLS OF INDUSTRIAL ENGR is required only for students without an undergraduate degree in IE

For details on the curriculum requirements for the MBA portion of the program, please visit Joseph M. Katz Graduate School of Business.

### Industrial Engineering, MSIE

#### Requirements for the MSIE Degree

The Master of Science in Industrial Engineering program is very flexible and requires 30 to 31 credits of graduate study. It may be obtained with or without a thesis option. With either option, the student is required to take three core courses (IE 2001, IE 2005, and IE 2006) that count for 9 credits, and at least two courses from the elective core (currently IE 2003, IE 2004, IE 2007, IE 2100) that count for an additional 6 credits. In addition, students who do not have an undergraduate degree in Industrial Engineering are required to take IE 2000 (1 credit) in their first term.

- With the non-thesis option, the remaining 15 credits may be freely chosen from the elective core or other departmental graduate courses based on the student's individual interests and the approval of his or her academic advisor. With the permission of the advisor, the student may also take up to 6 of the 15 credits from other relevant graduate offerings outside the department.

- With the thesis option, 9 of the 15 remaining credits may be freely chosen from the elective core or other departmental graduate offerings. In addition, the student must complete a 6 to 8-credit thesis. With this option, out-of-department electives are generally not permitted. In both cases, students who have already taken one or more of the core courses as undergraduates or as part of another graduate program are encouraged to skip such courses and substitute them with more advanced course work in the same area.

Normally the program can be completed in three terms of full-time study or two to three years of part-time study. Many graduate courses are offered in the evening for the convenience of working professionals. Courses are also offered over the summer term. Information regarding the MS program can be obtained by going to: http://www.engineering.pitt.edu/industrial/graduate/

### Health Care Systems Engineering Certificate

The certificate in Health Care Systems Engineering is intended for individuals pursuing careers in health systems management and process engineering. Primarily designed for Master's degree students in the Department of Health Policy & Management and the Department of Industrial Engineering, this program provides a rigorous and multi-disciplinary education as a complement to the core curriculum of both programs. With a focus on enhancing innovation, effectiveness and efficiency in health care and public health, the Certificate's ultimate goal is to produce well-educated professionals and leaders in their disciplines. The HSE certificate is not a stand-alone option but is open to all Master's students in Industrial Engineering, and students must formally apply for this option. For IE graduate students, the MS degree in IE along with the HSE certificate requires a total of 36-38 credits. Students interested in the HSE certificate are strongly encouraged to map out their study plans immediately after enrolling in the department.

A recommended study plan for MSIE students who choose the HSE Certificate option is shown below:
### Fall Year 1
- IE 2000 - FUNDAMENTALS OF INDUSTRIAL ENGINEERING
- IE 2005 - PROBABILITY AND STATISTICS FOR ENGINEERS 1
- IE 2006 - INTRODUCTION TO MANUFACTURING SYSTEMS
- IE 2076 - TOTAL QUALITY MANAGEMENT
- HPM 2014 - APPLICATIONS AND ISSUES IN FINANCIAL MANAGEMENT OF HEALTH CARE INSTITUTIONS
- IE 2110 - HEALTH SYSTEMS ENGINEERING SEMINAR
**Total:** 10-11 credits

### Spring Year 1
- IE 2001 - OPERATIONS RESEARCH
- IE 2102 - LEAN SIX SIGMA I (GREEN BELT)
- IE Core Elective
- HPM 2017 - QUANTITATIVE METHODS: DECISION TECHNOLOGIES AND OPERATIONS MANAGEMENT IN HEALTH CARE
**Total:** 12 credits

### Fall Year 2
- HPM 2207 - QUALITY ASSESSMENT AND PATIENT SAFETY
- HPM 2220 - COST EFFECTIVENESS ANALYSIS HEALTH CARE
- HPM 2105 - INTRODUCTION TO THE US HEALTHCARE DELIVERY SYSTEM 1
- IE Core Elective²
- IE 2110 - HEALTH SYSTEMS ENGINEERING SEMINAR
**Total:** 9 credits

### Spring Year 2
- HPM Elective²
- IE 2998 - GRADUATE PROJECTS/PRACTICUM³
**Total:** 5-6 credits

¹If undergraduate degree is not in Industrial Engineering

²These electives can be switched around, or the last term could be reduced to just 3 credits if these elective credits are taken earlier in the program (e.g. during the fall or summer)

³Cannot be taken earlier
Nuclear Engineering Certificate

Requirements

Students must satisfactorily complete five of the following nine courses in order to earn either the graduate or post-baccalaureate certificate in nuclear engineering:

- ENGR 2100 - FUNDAMENTALS OF NUCLEAR ENGINEERING or
  ME 2100 - FUNDAMENTALS OF NUCLEAR ENGINEERING Pre-req: an undergraduate degree in engineering or science.

- ENGR 2101 - NUCLEAR CORE DYNAMICS or
  ME 2101 - NUCLEAR CORE DYNAMICS Pre-req: ENGR 2100/ME 2100 or an undergraduate degree in nuclear engineering, work experience in nuclear engineering with instructor's permission.

- ENGR 2103 - INTEGRATION OF NUCLEAR PLANT SYSTEMS WITH THE REACTOR CORE or
  ME 2103 - INTEGRATION OF NUCLEAR PLANT SYSTEMS WITH THE REACTOR CORE Pre-req: ENGR 2100/ME 2100

- ENGR 2104 - NUCLEAR OPERATIONS AND SAFETY or
  ME 2104 - NUCLEAR OPERATIONS AND SAFETY Pre-req: ENGR 2100/ME 2100

- ENGR 2105 - INTEGRATED NUCLEAR POWER PLANT OPERATIONS or
  ME 2105 - INTEGRATED NUCLEAR POWER PLANT OPERATIONS Pre-req: ENGR 2102/ME 2102, ENGR 2103/ME 2103

- ENGR 2106 - NUCLEAR QUALITY ASSURANCE MANAGEMENT or
  ME 2106 - NUCLEAR QUALITY ASSURANCE MANAGEMENT

- ENGR 2107 - HIGH PERFORMANCE COMPUTING ALGORITHMS AND METHODS or
  ME 2107 - HIGH PERFORMANCE COMPUTING ALGORITHMS AND METHODS

- ENGR 2110 - NUCLEAR MATERIALS or
  ME 2110 - NUCLEAR MATERIALS Pre-req: an undergraduate course in materials science or instructor's permission

- ENGR 2112 - NUCLEAR CHEMISTRY AND RADIOCHEMISTRY or
  ME 2112 - NUCLEAR CHEMISTRY AND RADIOCHEMISTRY

- ENGR 2113 - RADIATION DETECTION AND MEASUREMENT or
  ME 2113 - RADIATION DETECTION AND MEASUREMENT

- ENGR 2115 - HEAT TRANSFER AND FLUID FLOW IN NUCLEAR PLANTS or
  ME 2115 - HEAT TRANSFER AND FLUID FLOW IN NUCLEAR PLANTS Pre-req: an undergraduate course in heat transfer and fluid flow or instructor's permission.

- ENGR 2116 - BOILING WATER REACTOR THERMAL-HYDRAULICS AND SAFETY or
  ME 2116 - BOILING WATER REACTOR THERMAL-HYDRAULICS AND SAFETY Pre-req: an undergraduate course in heat transfer and fluid flow or instructor's permission.

- ENGR 2118 - COMPUTATIONAL RADIATION TRANSPORT or
  ME 2118 - COMPUTATIONAL RADIATION TRANSPORT

- ENGR 2120 - MATHEMATICAL MODELING OF NUCLEAR PLANTS or
  ME 2120 - MATHEMATICAL MODELING OF NUCLEAR PLANTS
ENGR 2122 - MANAGEMENT PRINCIPLES IN NUCLEAR POWER or
ME 2122 - MANAGEMENT PRINCIPLES IN NUCLEAR POWER

ENGR 2125 - CASE STUDIES IN NUCLEAR CODES AND STANDARDS or
ME 2125 - CASE STUDIES IN NUCLEAR CODES AND STANDARDS

ENGR 2130 - NUCLEAR FUEL CYCLE AND ENVIRONMENTAL ISSUES or
ME 2130 - NUCLEAR FUEL CYCLE AND ENVIRONMENTAL ISSUES

Additional Information

The program will be sufficiently flexible to accommodate students from a wide spectrum of engineering disciplines.

Additional information can be found here:

- http://www.engineering.pitt.edu/nuclear/
- http://www.engineering.pitt.edu/online/

Who may apply

- Practicing engineers currently in or aspiring to a leadership role in the nuclear industry,
- Engineering professionals who desire graduate level education in nuclear engineering with a focus on safe nuclear plant operations,
- New graduates with a minimum of a bachelor's degree in a technical discipline, and
- Professionals who manage multidisciplinary teams for project design or management in the nuclear industry

How to apply

At the University of Pittsburgh, any student pursuing a Master's degree in the Swanson School of Engineering may pursue the graduate certificate in nuclear engineering as a focus track. It is also possible for individuals who wish to achieve the certificate only to apply to the program.

Interested students can apply here: https://app.applyyourself.com/AYApplicantLogin/fl_ApplicantLogin.asp?id=up-e

Questions

Inquires regarding the graduate certificate in nuclear engineering can be directed to:

Daniel G. Cole, PhD, P.E.: Director of Steven R. Tritch Program in Nuclear Engineering
636 Benedum Hall
dgcole@pitt.edu

Inquires regarding registration can be directed to:

Carolyn Chuha: Mechanical Engineering Graduate Administrator
636 Benedum Hall
Cac90@pitt.edu
412-624-9722
Safety Engineering Certificate

The certificate in Safety Engineering program is intended for engineers seeking training in safety engineering to enhance their operational abilities or if they become newly assigned to positions that have higher levels of safety engineering responsibilities. It is also designed to enhance the capabilities of non-engineering based safety professionals seeking training in safety engineering, and affords the opportunity for engineers and other working professionals to maintain their certifications and licensure as safety professionals. A minimum of 15 credits are required to complete this certificate and the certificate may be obtained as a stand-alone program or in conjunction with the MS degree. In particular, the certificate requires the following 3-credit courses: IE 2301 - INTRODUCTION TO SAFETY ENGINEERING, IE 2302 - ENGINEERING FOR PROCESS SAFETY and IE 2303 - WORK DESIGN. The remaining two classes (6 credits) can come from a list of approved electives within the Swanson School that is maintained by the program director.

Department of Mechanical Engineering and Material Science and Engineering

The Department of Mechanical Engineering and Materials Science offers MS and PhD degrees in both areas as well as MS degree in Nuclear Engineering, and the graduate certificate in Nuclear Engineering which is open to all graduate students within the Swanson School of Engineering. The certificate in Nuclear Engineering may also be earned by qualified post baccalaureate students who are not seeking to also earn an MS degree.

Contact Information

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NE Graduate Director: Daniel Cole, PhD
636 Benedum Hall
412-624-3069
E-mail: dgcole@pitt.edu

MEMS Graduate Administrator: Carolyn Chuha
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412-624-9722
E-mail: cac90@pitt.edu

Materials Science and Engineering

The Department of Materials Science and Engineering offers broad-based educational and research programs in materials science and engineering leading to the degrees of Master of Science and Doctor of Philosophy in Materials Science and Engineering. These programs are oriented toward the
application of fundamental knowledge of materials science and engineering to the solution of real-world materials problems that impede technological progress. They are designed to educate engineers, providing them with the tools to become successful in research, development, production, management, and teaching. The department also offers a dual degree Masters program with the Katz Graduate School of Business.

Basic courses on the structure, properties, and energetics of materials are taken in common. The student, working with faculty advisors, tailors the program to suit individual interests and demands of the student's chosen field of specialization through advanced and specialty courses.

The range of research programs in the department reflects the broad spectrum of interest of the faculty. However, interest in the structure and properties of materials and their relationship to materials processing is a common thread that ties together many of the programs. Research is aimed at building an understanding of basic phenomena that will lead to solutions of materials problems at the forefront of technological and social progress.

Current research programs are centered in several areas of ceramics for structural and functional applications: metals, including corrosion and oxidation; high-temperature materials; materials for energy applications; additive manufacturing; metal-forming processes; phase transformations in metals and ceramics; intermetallic phases; plastic deformation of metals; surfaces and interfaces; thermomechanical processing of steels; ceramic processing and sintering science; electronic properties of ceramics; nanostructured materials; catalytic materials; thin film science and technology; and laser processing of materials

**Master of Science Program**

The Master of Science in Materials Science and Engineering degree (MSMSE) may be pursued as either a Professional MS Track program (for practicing engineers) or a Research MS Track program. Students can tailor their individual MS program to emphasize different aspects of materials science and engineering (e.g., ceramics, metallurgy, etc.).

**Admissions**

A bachelor's or master's degree holder applying to the program must have cumulative grade point average (QPA) equal to or higher than 3.0 (B) or equivalent. Students who do not meet this requirement may be able to enter the program based on experience demonstrating their excellence, as evaluated by the Graduate Committee.

In some cases, depending on previous background and QPA, students may be admitted initially on a provisional basis. This usually requires students to secure grades of 3.0 (B) or better in courses that are required to obtain a better background in materials science and engineering and/or other graduate-level courses as deemed necessary by the Graduate Admissions Committee.

**Doctor of Philosophy Program**

http://www.engineering.pitt.edu/Departments/MEMS/_Content/Graduate/Graduate-Program-Accordion-content/

The Doctor of Philosophy Program in the Department of Materials Science and Engineering is a research degree leading largely to careers in teaching and research in academia and industry. This program is designed for excellent students. As the studies progress, students develop an understanding at the highest level in their area of specialization that must lead to an original contribution to the field in the PhD dissertation.

**Admissions**

A bachelor's or master's degree holder applying to the program must have a QPA equal to or higher than 3.3 (B+) or equivalent. Students who do not meet this requirement may be able to enter the program based on experience demonstrating their excellence, as evaluated by the Graduate Committee.

In some cases, depending on previous background and QPA, students may be admitted initially on a provisional basis. This usually requires students to secure grades of 3.3 (B+) or better in courses that are required to obtain a better background in materials science and engineering and/or other graduate-level courses as deemed necessary by the Graduate Admissions Committee.
Graduate Materials Science Courses

http://www.engineering.pitt.edu/Departments/MEMS/_Content/Graduate/Graduate-Program-Accordion-content/

Six core courses are offered annually and other graduate courses are offered on a two-year rotation.

Mechanical Engineering

Graduate Degree Programs

The mechanical engineering graduate program offers PhD and master of science degrees in mechanical engineering, and master of science degree in nuclear engineering. Each graduate student's program is developed individually within very broad limits and is carefully designed to meet his or her needs and objectives. The graduate faculty is committed to high-quality research and teaching. The curriculum is an integrated program of study in applied sciences, applied mathematics, and modern computational procedures that are relevant to the research emphasis in the department. The research is focused on five major areas: (1) Energy Technology: fluid mechanics, Newtonian and non-Newtonian fluid dynamics, heat transfer, combustion, fuel cells, gas turbines, advanced thermodynamics cycles and hybrid systems, thermal hydraulics in nuclear energy generation, energy accountability and sustainability in electronic equipment; transducers and control; (2) Smart Materials, Transducers, Dynamic Systems and Control: Sensors and actuators based on smart materials, adaptive structures and materials, structural acoustics, active/passive noise control, micro-electro-mechanical systems, microfluidic devices, radio-frequency energy harvesting, structural acoustics, and structural vibration control, novel actuators and mechatronics; (3) Nanotechnology: process design and modeling, tribology, composite materials, computational materials, multiscale simulation methods; micro- and nano-fabrication and characterization methods; (4) Advanced Manufacturing: 3D additive manufacturing, inkjet printing, laser manufacturing, topology optimization; and (5) Biomechanics: constitutive modeling of soft biological tissues, experimental and computational biomechanics, biomechanical modeling/simulation; musculoskeletal biomechanics, upper extremity biomechanics, joint replacement. In addition to the MS and PhD degrees, the department also offers a dual degree program with the Katz Graduate School of Business.

Admissions

https://app.applyyourself.com/AYApplicantLogin/fl_ApplicantLogin.asp?id=up-e

An application for either the MS in mechanical engineering or PhD program is judged on the student's prior academic record, GRE scores (required for PhD applicants), the accreditation of the prior degree granting school, and the capability of the department to match the applicant's interest with the program. A foreign national student who did not receive his or her Bachelor of Science or Master of Science degree from an accredited U.S. institution is required to take the TOEFL exam and receive a score of at least 550 (213 for the computerbased exam/80 internet-based exam) or the International English Language Testing System (IELTS) and receive a minimum result of Band 6.5 as well as the GRE. GRE testing may also be required for applicants of the MS program if requested by the Graduate Committee. Students with a Bachelor of Science degree in another engineering field, mathematics, or physics will also be considered for the graduate program with the possibility that prerequisite courses may be required.

A part-time program is available for students who are employed in local industries. Part-time students usually carry from 3 to 6 credits per term in either day or evening classes.

Requirements for the Master of Science Program

http://www.engineering.pitt.edu/MEMS/Graduate/Mechanical_Engineering/

The Master of Science in Mechanical Engineering degree (MSME) can be pursued as either a Professional MS Track (for practicing engineers) or a Research MS Track. The Professional Track is best suited to those currently in industry who are looking to increase their knowledge.

The Nuclear Engineering Graduate Program
The Department of Mechanical and Materials Science offers graduate studies in advanced nuclear engineering. The graduate faculty is committed to high-quality research and teaching. The curriculum is an integrated program of study in applied sciences, applied mathematics, and modern computational procedures that are relevant to the research emphasis in the department. The research is focused on three major areas: (1) Nuclear Energy Technology (2) Operations and Safety (3) Nuclear Materials (4) Nuclear Modeling and Simulations and (5) Radiology and Radiochemistry.

**Degree Programs**

An application for the MS program is judged on the student's prior academic record, GRE scores, the accreditation of the prior degree granting school, and the capability of the department to match the applicant's interest with the program. A foreign national student who did not receive his or her Bachelor of Science from an accredited U.S. institution is required to take the TOEFL exam and receive a score of at least 550 (213 for the computer-based exam / 79-80 internet-based exam) or the International English Language Testing System (IELTS) and receive a minimum result of Band 6.5 as well as the GRE. Students with a Bachelor of Science degree in another engineering field, mathematics, or physics will also be considered for the graduate program with the possibility that prerequisite courses may be required. A part-time program is available for students who are employed in local industries. Part-time students usually carry from three to six credits per term in either day or evening classes.

Applicants who do not meet these requirements will be considered on an individual basis with strong emphasis given to academic promise, career orientation, work experience, and preparation in engineering and related disciplines. In some cases, applicants may be admitted provisionally until certain deficiencies in either coursework or academic achievement are satisfied.

**Nuclear Engineering Graduate Certificate**

The Department of Mechanical Engineering and Materials Sciences is offering a certificate for students in the Swanson School of Engineering with an interest in nuclear science and technology. Students from the Bioengineering, Civil, Chemical, Industrial, Mechanical, Materials Science, and Electrical/Computer engineering programs may be most interested in obtaining this certificate.

Fifteen units are required to complete the certificate. This certificate may be combined with graduate courses in any one of the School's seven Master of Science (MS) degree programs or the certificate may be awarded stand-alone as a post-baccalaureate certificate. Since the nuclear courses are cross-listed as Mechanical Engineering courses, they can be counted toward both a MSME degree and Nuclear Engineering Graduate Certificate.

This program provides coursework for graduate level nuclear engineering education with a focus on nuclear operations and safety. This focus on nuclear operations and safety not only fulfills a recognized educational need, but is also designed to take advantage of unique industrial resources in the Pittsburgh area which will greatly facilitate student learning.

The renaissance of nuclear science and technology in the United States has created a need in the marketplace once again for engineers with nuclear knowledge. The University of Pittsburgh aims to meet these marketplace needs by preparing engineers through the graduate certificate in nuclear engineering. Classes are taught by current and former nuclear engineers, including faculty with experience conducting commercial nuclear operations programs for Westinghouse or the Beaver Valley Nuclear Station and with certificates or operation licenses from the US Nuclear Regulatory Commission.

**Objectives**

The objectives of the nuclear engineering certificate are:

- To develop the basic competencies needed by science and engineering graduates to contribute quickly and effectively to the renaissance of nuclear science and technology in the United States and abroad.
- To create a benchmark educational program that can serve as a model throughout academia

**Materials Science and Engineering, PhD**

Requirements for the PhD Degree
A minimum of 72 credits is required for the PhD. Of the total of 72 credits required for the PhD degree a minimum of 36 credits must be coursework beyond the Bachelor of Science (BS) degree. PhD students must maintain a minimum QPA of 3.3 (B+) in this coursework. The coursework consists of (I) a materials core (six required courses students must take in the first year of enrollment), (II) a group of courses tailored for each student's research and as required technical broadening beyond the MSE focus, (III) courses to address mathematical/numerical skills, and (IV) PhD Research and Dissertation credits. The student's advisor must approve the course sequence selection.

The 18 credits core course component must be taken within the first year of the program. Typically, PhD students will carry a course load of three courses per term until their coursework is completed. If a student's background is insufficient for a given graduate course, the student must prepare by attending appropriate undergraduate courses or through independent study. This should be arranged in consultation with the student's faculty advisor and the lecturing faculty of the relevant course(s).

A total of up to twelve (12) credits may be taken in relevant science, math, engineering disciplines outside of the MSE designation of graduate level courses and in different departments than MEMS. The selection of courses, in general, must be acceptable to the student's advisor.

Minimum credit requirements include:

Core Courses (18 credits)

- MSE 2003 - STRUCTURE OF MATERIALS
- MSE 2011 - ENERGETICS
- MSE 2013 - KINETICS IN MATERIALS SCIENCE
- MSE 2015 - ELECTROMAGNTC PROPS MATERIALS
- MSE 2030 - MECHANICAL BEHAVIOR OF MATERIALS
- MSE 2067 - ELEMENTS OF MATRLS SCI & ENGRG

Note:

Students must score at least a B (3.0) in each of these six classes. If a student does not get at least a letter grade of B, the class must be taken a second time. These classes must be successfully completed before the student can apply for admission to PhD Candidacy.

Advanced Courses

A student must take advanced courses and technical electives. These are comprised of at least two courses (6 credits) selected by the student and his or her advisor as the best advanced preparation for research in the area of the dissertation, and two courses, as a broadening experience, to complement the student's PhD specialization and contribute significantly to career preparation.

Mathematics Courses

The student is required to take two mathematics/numerical courses for six (6) credits beyond those required for the materials science and engineering Bachelor of Science degree. They can be satisfied by many courses. This requirement may be waived if it was met in a previous program.

PhD Research and Dissertation Credits

Each student must also have:
- At least six (6) credits of MSE 3997 (PhD Research);
- At least 12 credits of MSE 3999 (PhD Dissertation);

Please note that registration for MSE 3999 is allowed only after the student has passed the Comprehensive Examination and defended the PhD Proposal, which qualifies the student for the status of PhD Candidacy.

The course requirements described in these guidelines are a minimum requirement. The minimum requirement of 72 credits of graduate work must be satisfied by combinations of research, course work and transfer credits for the award of a PhD degree. Students are allowed to take additional
courses with the agreement of their advisors. In some cases, these courses may be suggested by the PhD Committee for better preparation for a given research area. Note that completion of the PhD degree and admission PhD candidacy require a GPA of B+ or better (≥3.3).

### Mechanical Engineering, PhD

http://www.engineering.pitt.edu/MEMS/Graduate/Graduate_Information/

The goal of the Doctor of Philosophy program in the Department of Mechanical Engineering is to develop the student for the rigorous career demands of engineering research either in the industrial or academic fields. The student is educated at the pioneering edge of technical, management, systems design, and decision-making concepts. This work requires a strong background in mathematics and one of the specialty areas of mechanical engineering. The PhD student is expected to attend full time. It is possible, however, to seek candidacy as a part-time student with the stipulation that the PhD candidate must spend at least one full-time academic year on campus.

A graduate student who has completed eight course courses of the master's program in good standing can go directly into the PhD program. An applicant who has received the Master of Science in mechanical engineering from a university with an Accreditation Board for Engineering and Technology (ABET)-accredited mechanical engineering curriculum, or who has substantially equivalent preparation, is eligible to enter the Doctor of Philosophy program in the Department of Mechanical Engineering.

If deficiencies in engineering preparation are noted, as in the case of science majors from accredited institutions, admission may be granted after the completion of such designated undergraduate courses as may best correct the deficiencies. Only those individuals whose preparation has been judged satisfactory for graduate study in the Department of Mechanical Engineering will be admitted to full graduate status.

Doctoral level courses are numbered in the 3000 series, but courses numbered in the 2000 series may also be appropriate for doctoral study. Courses numbered below 2000 do not meet the minimum requirements for doctoral study, although they may be taken to supplement a doctoral program. Students must maintain a minimum cumulative QPA of 3.30 in courses to be eligible to take the preliminary and comprehensive examinations as well as to graduate.

### Plan of Study

During the first term in the doctoral program the student must submit a plan of study for approval by the department. Minimum course requirements (beyond the MS or equivalent degree) include:

- 30 credits for M.S. degree (or equivalent)
- 18 course credits at an advanced graduate level (Approval is required by the student's advisor and the graduate committee. Courses may NOT include: ME 2001, ME 2002, ME 2003, ME 2004, ME 2007, ME 2020, ME 2022, ME 2047, ME 2053, ME 2060, ME 2074, ME 2100, ME 2125 and any course that is a dual graduate/undergraduate course. Non-duplicating courses from other departments may be allowed subject to approval.)
- ME 3997 - RESEARCH, PHD
- ME 3999 - PHD DISSERTATION (after admission to PhD Candidacy)
- 6 additional credits approved by advisor and graduate committee

**Total Credits: 72**

### Materials Science and Engineering - Professional Track, MSMSE

The professional MS track is primarily oriented toward part-time students currently working in industry.

### MS Track Requirements

The professional track consists of a minimum of 30 course credits (equivalent to 10 courses). There are no thesis or comprehensive examination requirements for this degree. Up to nine (9) credits of coursework counting towards the 30 course credits requirement may consist of non-MSE
courses in other Engineering, Science or Mathematics disciplines that are approved by a student's advisor. No more than six credits may be granted to a student as transfer credit for work done at another accredited graduate institution. At least 21 course credits must be obtained from MSE 2000 and 3000 courses, not including Graduate Seminar (MSE 3023 and 3024), MS Research (MSE 2997), and MS Thesis (MSE 2999). An independent graduate project (MSE 2998) can be conducted after consultation with the student's faculty advisor and may account for 3 of the 21 required MSE credits. Students with non-MSE backgrounds are strongly encouraged to take for credit introductory courses (e.g. MSE 2067 or equivalent). MS degrees are conferred only on those students who have completed all course requirements with at least a 3.00 (B) GPA.

Materials Science and Engineering - Research Track, MSMSE

The research track is primarily for full-time students who have the intention to pursue a PhD or are strongly oriented toward a research career. The University transcript will include an entry indicating that a student is in the research MS track.

Research MS Track Requirements

The Research Track MS degree requires a minimum of 30 credits of course and research based graduate study, including at least 21 course credits. At most up to nine (9) credits of coursework counting towards the required minimum of 21 course credits may consist of technical courses in other non-MSE Engineering, Science or Mathematics disciplines that are approved by a student's advisor. No more than six (6) credits may be granted toward completion of the requirements for the Research Track MS for work completed at another accredited graduate institution. A minimum of 12 course credits must be derived from 2000- and 3000-level MSE courses, not including credits associated with Graduate Seminar (MSE 3023 and MSE 3024), MS Research (MSE 2997), and MS Thesis (MSE 2999). Students with non-MSE backgrounds are strongly encouraged to take for credit introductory courses (e.g. MSE 2067 or equivalent). The student's advisor must approve the course sequence selection. In addition to coursework requirements a minimum of 3 credits of MS research (MSE 2997) and six (6) credits of MS Thesis (MSE 2999) are required. Master's degrees are conferred only on those students who have completed all courses required for the degree with an average grade of least a 3.00 (B) GPA.

MS Thesis

An MS student should initiate research work as early as possible and then register for MS research (MSE 2997). Once thesis preparation has begun, a student must register for thesis credits (MSE 2999) in each succeeding term until successful completion of the thesis and a final oral defense and comprehensive exam. The MS thesis document is at least expected to be a report on independently conducted research and must adhere to the School of Engineering defined style and format. A Style and Form Manual for a thesis is available in the Engineering Office of Administration.

The purpose of an MS thesis oral defense is to evaluate an MS thesis and the student's command of the research subject. The successful completion of a defense is a requirement for the MS degree. The thesis examining committee consists of at least three members of the MSE faculty who are recommended by the student's advisor and approved by the department chair. After successfully completing a defense, a student must deposit an electronic and/or hard copies of the approved thesis in accordance with the current guidelines for thesis submissions available from the Office of Administration of the School of Engineering or the MSE Program Office.

Part-time students may pursue the research MS track. However, they must recognize that, although their thesis topics may be related to the broad technical area of their employment, results of work-related routine technical activities, analysis, surveys, or studies conducted for employers are not acceptable for inclusion in MS theses. Furthermore, part-time students should become aware of the University Intellectual Property Ownership Policy before undertaking theses. Prospective students must clarify all of these issues before contemplating a research-based MS degree.

Mechanical Engineering - Professional Track, MSME

Professional Master of Science Track

Students must take at least one of the following mathematics courses:

- ME 2001 - DIFFERENTIAL EQUATIONS
- ME 2002 - LINEAR AND COMPLEX ANALYSIS
ME 2646 - LINEAR SYSTEM THEORY or
ECE 2646 - LINEAR SYSTEM THEORY

Mechanical engineering courses are offered from the following subject areas:

Dynamic Systems and Control

- ME 2015 - HUMAN ROBOTICS AND CONTROL
- ME 2020 - MECHANICAL VIBRATIONS
- ME 2027 - ADVANCED DYNAMICS
- ME 2042 - MEASUREMENT AND ANALYSIS OF VIBRO-ACOUSTIC SYSTEMS
- ME 2045 - LINEAR CONTROL SYSTEMS
- ME 2046 - DIGITAL CONTROL SYSTEMS
- ME 2242 - OPTIMAL FILTERING AND ESTIMATION
- ME 2247 - INTRODUCTION TO NONLINEAR CONTROL DESIGN or
  ECE 2647 - INTRODUCTION TO NONLINEAR CONTROL DESIGN
- ME 2646 - LINEAR SYSTEM THEORY or
  ECE 2646 - LINEAR SYSTEM THEORY
- ME 2671 - OPTIMIZATION METHODS or
  ECE 2671 - OPTIMIZATION METHODS
  ECE 3650 - OPTIMAL CONTROL
- ME 2082 - ELECTROMECHANICAL SENSORS & ACTUATORS

Fluid Mechanics

- ME 2003 - INTRODUCTION TO CONTINUUM MECHANICS
- ME 2055 - COMPUTATIONAL TRANSPORT PHENOMENA
- ME 2070 - MICROFLUIDICS
- ME 2074 - ADVANCED FLUID MECHANICS 1

MEMS/NEMS

- ME 2010 - NANOMECHANICS, MATERIALS AND DEVICE
- ME 2049 - THERMAL MANAGEMENT IN ELECTRONIC SYSTEMS
- ME 2082 - ELECTROMECHANICAL SENSORS & ACTUATORS
- ME 2222 - NANO-SCALE MODELING AND SIMULATION: MOLECULAR DYNAMICS
- ME 2223 - NANO-SCALE MODELING AND SIMULATIONS

Materials and Biomechanics

- ME 2005 - STRUCTURE OF MATERIALS
- ME 2007 - ELEMENTS OF MATERIAL SCIENCE AND ENGINEERING 1
- ME 2008 - Elements of Materials Science and Engineering 2 (Proposed)
- ME 2009 - PROCESSING OF MATERIALS
- ME 2010 - NANOMECHANICS, MATERIALS AND DEVICE
- ME 2048 - ENGINEERING ALLOYS FOR CONSTRUCTION
• ME 2060 - NUMERICAL METHODS
• ME 2062 - ORTHOPAEDIC ENGINEERING
• ME 2067 - MUSCULOSKELETAL BIOMECHANICS
• ME 2084 - INTRODUCTION TO POLYMER SCIENCE
• ME 2086 - MECHANICS OF 3D PRINTED MATERIALS AND STRUCTURES
• ME 2222 - NANO SCALE MODELING AND SIMULATION: MOLECULAR DYNAMICS
• ME 2223 - NANO SCALE MODELING AND SIMULATIONS:

Nuclear

• ME 2100 - FUNDAMENTALS OF NUCLEAR ENGINEERING
• ME 2101 - NUCLEAR CORE DYNAMICS
• ME 2102 - NUCLEAR PLANT DYNAMICS AND CONTROL
• ME 2103 - INTEGRATION OF NUCLEAR PLANT SYSTEMS WITH THE REACTOR CORE
• ME 2104 - NUCLEAR OPERATIONS AND SAFETY
• ME 2105 - INTEGRATED NUCLEAR POWER PLANT OPERATIONS
• ME 2106 - NUCLEAR QUALITY ASSURANCE MANAGEMENT
• ME 2107 - HIGH PERFORMANCE COMPUTING ALGORITHMS AND METHODS
• ME 2110 - NUCLEAR MATERIALS
• ME 2112 - NUCLEAR CHEMISTRY AND RADIOCHEMISTRY
• ME 2115 - HEAT TRANSFER AND FLUID FLOW IN NUCLEAR PLANTS
• ME 2116 - BOILING WATER REACTOR THERMAL-HYDRAULICS AND SAFETY
• ME 2118 - COMPUTATIONAL RADIATION TRANSPORT
• ME 2120 - MATHEMATICAL MODELING OF NUCLEAR PLANTS
• ME 2122 - MANAGEMENT PRINCIPLES IN NUCLEAR POWER
• ME 2125 - CASE STUDIES IN NUCLEAR CODES AND STANDARDS
• ME 2130 - NUCLEAR FUEL CYCLE AND ENVIRONMENTAL ISSUES

Solid Mechanics

• ME 2003 - INTRODUCTION TO CONTINUUM MECHANICS
• ME 2004 - ELASTICITY
• ME 2010 - NANO MECHANICS, MATERIALS AND DEVICE
• ME 2022 - APPLIED SOLID MECHANICS
• ME 2033 - FRACTURE MECHANICS FOR PRODUCT DESIGN AND MANUFACTURING
• ME 2047 - FINITE ELEMENT ANALYSIS

Thermal Systems

• ME 2049 - THERMAL MANAGEMENT IN ELECTRONIC SYSTEMS
• ME 2050 - THERMODYNAMICS
• ME 2053 - HEAT AND MASS TRANSFER
• ME 2055 - COMPUTR ANAL TRANSPORT PHENOMENA
• ME 2056 - INTRO TO COMBUSTION THEORY
• ME 2074 - ADVANCED FLUID MECHANICS 1
• ME 2254 - CONVECTION HEAT TRANSFER

Note:
A student may take up to 9 graduate credits from other engineering, mathematics, or physics departments.

**Mechanical Engineering - Research Track, MSME**

**Research Master of Science Track**

The Research MS Track is designed for individuals seeking an in-depth research experience in mechanical engineering. A total of 21 course credits and a master's thesis are required for this degree. Upon entering the program, students plan a program of study with the aid of their faculty advisor.

Students must take:

- ME 2997 - RESEARCH, M.S.
- ME 2999 - M. S. THESIS (at least 6 credits)

At least one of the following mathematics courses:

- ME 2001 - DIFFERENTIAL EQUATIONS
- ME 2002 - LINEAR AND COMPLEX ANALYSIS
- ME 2646 - LINEAR SYSTEM THEORY or
- ECE 2646 - LINEAR SYSTEM THEORY

**Note:**

A student may take up to 9 graduate credits from other engineering, mathematics, or physics departments.

**Nuclear Engineering - Non-Thesis Option (Professional Track), MSNE**

**Master of Science Program**

Upon entering, the student plans a program of study with the aid of the faculty advisor. The course requirements can be met by either the

(1) **Thesis Option (Research M.S.Track):**

- 21 course credits
- ME 2997 - RESEARCH, M.S.
- ME 2999 - M. S. THESIS - 6 credits

30 Credits

Or the

(2) **Non-Thesis Option (Professional M.S.Track):**

- 30 course credits.

**Non-Thesis Option (Professional M.S. Track)**
The professional MS programs are oriented toward full-time students seeking a career in industry, and part-time students currently working in industry. Full-time GSR-supported students might change to professional M.S. track, upon request/approval by the sponsoring faculty advisor and the graduate program. Professional master's degrees are conferred upon those students who demonstrate comprehensive mastery of their general field of study. The professional master's degrees normally require the satisfactory completion of at least 30 course credits of graduate study approved by the department.

No more than six credit hours may be granted to a student as transfer credit for work done at another accredited graduate institution. (See Acceptance of Transfer Credits section for further detail.) MS/MBA students are limited to transferring six credit hours. All credits earned in the ME master's degree program must be at the graduate level (the 2000 or 3000 series courses).

Master's degrees are conferred only on those students who have completed all course requirements with at least a 3.00 QPA. (Visit http://www.bulletins.pitt.edu/graduate/index.html for further detail.

In either case, students seeking the Master of Science degree in Nuclear Engineering must take at least one of the mathematics courses, ME 2001, ME 2002 or ME 2646 / ECE 2646. Up to nine (six for MS/MBA students) graduate credits from other engineering, mathematics, or physics departments may be used in fulfilling the remaining course requirements. The MS/MBA students are also required to complete an integrated project course. Please contact the Graduate Director for a copy of the guidelines for the integrated project course.

**Nuclear Engineering - Thesis Option (Research Track), MSNE**

**Master of Science Program**

Upon entering, the student plans a program of study with the aid of the faculty advisor. The course requirements can be met by either the

(1) Thesis Option (Research M.S.Track):

- 21 course credits
- ME 2997 - RESEARCH, M.S.
- ME 2999 - M. S. THESIS - 6 credits

30 Credits

Or the

(2) Non-Thesis Option (Professional M.S.Track):

- 30 course credits.

**Thesis Option (Research M.S. Track)**

The research M.S. track is primarily for those students who wish to advance the technology. Students in this track will be advised to take those courses best suited for the research degree. Full time graduate students who are supported by department scholarships must choose the research M.S. track. Each candidate must provide a suitable number of copies of the thesis for review and use as designated by the thesis examining committee, consisting of at least three members of the faculty recommended by the major advisor and approved by the department chair. The major advisor must be a Mechanical Engineering or Material Science Faculty member with an appointment in the Mechanical Engineering and Materials Science Department. Nonnative English speakers are encouraged to take ENGR 2050 - TECHNICAL WRITING (however this course does not count toward graduation). The final oral examination in defense of the master's thesis is conducted by the thesis committee, and a report of this examination signed by all members of the committee must be filed in the office of the dean. After the examination, the approved ETD must be deposited to the ETD Online System where it will be reviewed by the ETD Student Services Staff in the dean's office of the student's school and submitted for microfilming and deposit in the University Library System. A receipt for the ETD processing/microfilming fees and any necessary paperwork must be submitted to the appropriate ETD Staff in the Office of Administration.
Nuclear Engineering Certificate

Requirements

Students must satisfactorily complete five of the following nine courses in order to earn either the graduate or post- baccalaureate certificate in nuclear engineering:

- ENGR 2100 - FUNDAMENTALS OF NUCLEAR ENGINEERING or ME 2100 - FUNDAMENTALS OF NUCLEAR ENGINEERING Pre-req: an undergraduate degree in engineering or science.
- ENGR 2101 - NUCLEAR CORE DYNAMICS or ME 2101 - NUCLEAR CORE DYNAMICS Pre-req: ENGR 2100/ME 2100 or an undergraduate degree in nuclear engineering, work experience in nuclear engineering with instructor's permission.
- ENGR 2102 - NUCLEAR PLANT DYNAMICS AND CONTROL or ME 2102 - NUCLEAR PLANT DYNAMICS AND CONTROL Pre-req: ENGR 2101/ME 2101
- ENGR 2103 - INTEGRATION OF NUCLEAR PLANT SYSTEMS WITH THE REACTOR CORE or ME 2103 - INTEGRATION OF NUCLEAR PLANT SYSTEMS WITH THE REACTOR CORE Pre-req: ENGR 2100/ME 2100
- ENGR 2104 - NUCLEAR OPERATIONS AND SAFETY or ME 2104 - NUCLEAR OPERATIONS AND SAFETY Pre-req: ENGR 2100/ME 2100
- ENGR 2105 - INTEGRATED NUCLEAR POWER PLANT OPERATIONS or ME 2105 - INTEGRATED NUCLEAR POWER PLANT OPERATIONS Pre-req: ENGR 2102/ME 2102, ENGR 2103/ME 2103
- ENGR 2106 - NUCLEAR QUALITY ASSURANCE MANAGEMENT or ME 2106 - NUCLEAR QUALITY ASSURANCE MANAGEMENT
- ENGR 2107 - HIGH PERFORMANCE COMPUTING ALGORITHMS AND METHODS or ME 2107 - HIGH PERFORMANCE COMPUTING ALGORITHMS AND METHODS
- ENGR 2110 - NUCLEAR MATERIALS or ME 2110 - NUCLEAR MATERIALS Pre-req: an undergraduate course in materials science or instructor's permission
- ENGR 2112 - NUCLEAR CHEMISTRY AND RADIOCHEMISTRY or ME 2112 - NUCLEAR CHEMISTRY AND RADIOCHEMISTRY
- ENGR 2113 - RADIATION DETECTION AND MEASUREMENT or ME 2113 - RADIATION DETECTION AND MEASUREMENT
- ENGR 2115 - HEAT TRANSFER AND FLUID FLOW IN NUCLEAR PLANTS or ME 2115 - HEAT TRANSFER AND FLUID FLOW IN NUCLEAR PLANTS Pre-req: an undergraduate course in heat transfer and fluid flow or instructor's permission.
- ENGR 2116 - BOILING WATER REACTOR THERMAL-HYDRAULICS AND SAFETY or ME 2116 - BOILING WATER REACTOR THERMAL-HYDRAULICS AND SAFETY Pre-req: an undergraduate course in heat transfer and fluid flow or instructor's permission.
- ENGR 2118 - COMPUTATIONAL RADIATION TRANSPORT or ME 2118 - COMPUTATIONAL RADIATION TRANSPORT
Additional Information

The program will be sufficiently flexible to accommodate students from a wide spectrum of engineering disciplines.

Who may apply

- Practicing engineers currently in or aspiring to a leadership role in the nuclear industry,
- Engineering professionals who desire graduate level education in nuclear engineering with a focus on safe nuclear plant operations,
- New graduates with a minimum of a bachelor's degree in a technical discipline, and
- Professionals who manage multidisciplinary teams for project design or management in the nuclear industry

How to apply

At the University of Pittsburgh, any student pursuing a Master's degree in the Swanson School of Engineering may pursue the graduate certificate in nuclear engineering as a focus track. It is also possible for individuals who wish to achieve the certificate only to apply to the program.

Questions

Inquires regarding the graduate certificate in nuclear engineering can be directed to:

Daniel G. Cole, PhD, P.E.: Director of Steven R. Tritch Program in Nuclear Engineering
636 Benedum Hall
dgcole@pitt.edu

Inquires regarding registration can be directed to:

Carolyn Chuha: Mechanical Engineering Graduate Administrator
636 Benedum Hall
Cac90@pitt.edu
412-624-9722

Medical Scientist Training Program

Chemical Engineering, MD/PhD
The MD/PhD program in chemical engineering is administered through the Medical Scientist Training Program (MSTP). This physician-scientist training program is tailored to a student's specific research interests. Intended for students who have a clearly defined interest in biomedical research, the MSTP links various PhD programs with the School of Medicine.

### Approved Math Courses

- BIOENG 2001 - MATHEMATICAL METHODS IN BIOENGINEERING 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- BIOST 2049 - APPLIED REGRESSION ANALYSIS
- CHE 2410 - MATHMTCL METHD IN CHEMCL ENGRG 1
- ECE 2521 - ANALYSIS STOCHASTIC PROCESSES
- ECE 2523 - DIGITAL SIGNAL PROCESSING
- ECE 2671 - OPTIMIZATION METHODS
- MATH 2070 - NUMERCL METH IN SCI COMPUTING 1
- MATH 2071 - NUMERCL MATH IN SCI COMPUTING 2
- MATH 2090 - NUMERICAL SOLUTN ORDNRY DE
- MATH 2370 - MATRICES AND LINEAR OPERATORS
- MATH 2371 - MATRICES & LINEAR OPERATORS 2
- MATH 2500 - ALGEBRA 1
- MATH 2700 - TOPOLOGY 1
- MATH 2800 - DIFFERENTIAL GEOMETRY 1
- MATH 2801 - DIFFERENTIAL GEOMETRY 2
- MATH 2950 - METHODS IN APPLIED MATHEMATICS
- MATH 2960 - COMPUTATIONAL FLUID MECHANICS
- MATH 3070 - NUMRC SOLUTN NONLINEAR EQUATIONS
- MATH 3071 - NUMRC SOLUTN PARTL DIFFT EQUA
- MATH 3072 - FINITE ELEMENT METHOD
- MATH 3370 - MATHEMATICAL NEUROSCIENCE
- MATH 3375 - COMPUTATIONAL NEUROSCIENCE METHODS
- MATH 3380 - MATHEMATICAL BIOLOGY
- ME 2001 - DIFFERENTIAL EQUATIONS
- ME 2002 - LINEAR AND COMPLEX ANALYSIS
- STAT 2220 - APPLIED REGRESSION
- STAT 2661 - LINEAR MODELS THEORY 1

### Approved Life Sciences Courses

- BIOENG 2065 - INTRO TO CELL MECHANOBIOLOGY
- BIOENG 2520 - MOL CELL BIOLOGY & BIOPHYSIC 1
- BIOENG 2620 - INTRODUCTION TO TISSUE ENGINEERING
- BIOENG 3735 - EXTRACELLULAR MATRIX IN TISSUE BIOLOGY AND BIOENGINEERING
- BIOSC 2070 - IMMUNOLOGY
- HRS 2004 - PATHOPHYSIOLOGY ACROSS THE LIFE SPAN
- HRS 2301 - SELECTED TOPICS IN ANATOMY
- HRS 2306 - MOTOR LEARNING AND CONTROL OF MOVEMENT/HEALTH PROMOTION
- HRS 2307 - FALLS AND BALANCE DYSFUNCTION: PHYSICAL THERAPY MANAGEMENT AND INTERVENTION
- HRS 2356 - CONCEPTS AND PRINCIPLES RELATED TO SENSORY MOTOR CONTROL 1
- HRS 2710 - FUNCT NEUROMUSCULAR STIMULATION
Approved Statistics Courses

- BIOENG 2525 - APPLIED BIOSTATISTICS
- BIOINF 2118 - STATISTICAL FOUNDATIONS OF BIOMEDICAL INFORMATICS
- BIOST 2014 - INTRODUCTION TO BIOSTATISTICS FOR BIMEDICAL SCIENTIST
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- CLRES 2020 - BIOSTATISTICS
- CMU 36-746 - STATISTICAL METHODS FOR NEUROSCIENCE*
- CMU 36-759 - STATISTICAL MODELS OF THE BRAIN*
- PSY 2010 - STATISTICAL ANALYSIS 2
- STAT 2220 - APPLIED REGRESSION
- STAT 2221 - ADVANCED APPLIED MULTIVARIATE ANALYSIS

*Note that these courses will only count with prior approval from the BioE Graduate Coordinator as a statistics course for those students in the Neural Engineering track area provided those students have a formal background in statistics, via an undergraduate degree or other means. Any questions and requests for the required approval should be directed to the Graduate Coordinator.

Biomechanics Track
This graduate track has a specific menu of courses to satisfy the 9-credit "Track Courses" requirement for the Research M.S., Ph.D., or M.D./Ph.D.

At the University of Pittsburgh there are broad and extensive research activities in Biomechanics. Application areas include cardiovascular, musculoskeletal, ergonomic, occupational, rehabilitation, and urological. Our educational goal is to expand on the fundamental knowledge gained at the undergraduate level of both biomechanics and the biological sciences, and demonstrate how they can be applied to solve basic and applied biomedical problems. We believe that biomechanics concentration students should be exposed to all areas of biomechanics, and not just their area of specialty. Further, since many areas of biomechanics share similar background material, our courses should present fundamental material first, followed by application examples to give the students a feel for "theory and application" in biomechanics. The fundamental philosophy of the approach is multi-scale, wherein Biomechanics is taught as a means to solve biomedical problems, regardless of problem scale (cell to whole body).

Due to the wide breadth of student interests, we offer the following two sub-tracks:

Sub-track I - Biosolid-fluid mechanics/Biological materials
Sub-track II - Biodynamics/Rehabilitation and Human Movement

Each sub-track has a set of three required courses (see below), as well as special options for a second/third life science courses that would be relevant to their area of interest.

**Required courses for the biological materials and biofluids sub-track option:**

- BIOENG 2067 - MUSCULOSKELETAL BIOMECHANICS
- BIOENG 2633 - BIOMECHANICS 4: BIOMECHANICS OF ORGANS, TISSUES, AND CELLS
- BIOENG 2675 - FINITE ELASTICITY OF SOFT TISSUES

**Required courses for the biodynamics/rehab sub-track option:**

- BIOENG 2632 - BIOMECHANICS 3: BIODYNAMICS OF MOVEMENT
- BIOENG 2633 - BIOMECHANICS 4: BIOMECHANICS OF ORGANS, TISSUES, AND CELLS

**For the third track course, choose one of following two options:**

- BIOENG 2067 - MUSCULOSKELETAL BIOMECHANICS

An approved Human Movement/Rehabilitation course as listed below:

Students may satisfy their life science course requirements for the PhD program with any of the courses from the BioE approved list of life science courses.

**Recommended Engineering/Math/Related courses:**

- ME (CMU) 759 - CELL MECHANICS
- BIOENG 2065 - INTRO TO CELL MECHANOBIOLOGY

**Cardiovascular:**

- BIOENG 2515 - CARDIO SYSTM DYNAMICS & MODELING
- BIOENG 3025 - VASC BIOMECH & ROLE IN PATHOBIOL

**Human Movement/Rehabilitation:**

- BIOENG 2035 - BIOMECHANICAL MODELING OF MOVEMENT
- BIOENG 2061 - ERGONOMICS & OCCUPTNL BIOMECHNC
BIOENG 2650 - LEARNING & CONTROL OF MOVEMENT
BIOENG 2703 - REHABILITATION ENGINEERING DSGN
BIOENG 2704 - FUNDMS REHAB ENGR AND TECHN 1
BIOENG 2709 - REHABILITATION BIOMECHANICS
BIOENG 2725 - DESIGN FOR INJURY PREVENTION

Tissue engineering/Biomaterials
BIOENG 2370 - COMPUTATIONAL SIMULATION IN MEDICAL DEVICE DESIGN
BIOENG 2810 - BIOMATERIALS & BIOCOMPATIBILITY
BIOENG 3015 - SCAFFOLDS FOR REGENERATIVE MEDICINE

Medical Imaging
BIOENG 2380 - MEDICAL IMAGING SYSTEMS 1
BIOENG 2382 - MEDICAL IMAGING SYSTEMS 2
BIOENG 2630 - METHODS IN IMAGE ANALYSIS

Mechanical Engineering/Civil Engineering
CEN 12775 Finite Elements in Mechanics (CMU)
ME 2003 - INTRODUCTION TO CONTINUUM MECHANICS
ME 2027 - ADVANCED DYNAMICS
ME 2045 - LINEAR CONTROL SYSTEMS
ME 2047 - FINITE ELEMENT ANALYSIS
ME 2062 - ORTHOPAEDIC ENGINEERING
ME 2074 - ADVANCED FLUID MECHANICS 1
ME 2080 - INTRO MICROELECTROMECHANICAL SYS
ME 3011 - FINITE ELASTICITY

Math
BIOST 2049 - APPLIED REGRESSION ANALYSIS
MATH 2070 - NUMERCL METH IN SCI COMPUTING 1
MATH 2071 - NUMERCL MATH IN SCI COMPUTING 2
MATH 2090 - NUMERICAL SOLUTN ORDNRY DE
MATH 2370 - MATRICES AND LINEAR OPERATORS
MATH 2371 - MATRICES & LINEAR OPERATORS 2
MATH 3380 - MATHEMATICAL BIOLOGY
MATH 2500 - ALGEBRA 1
MATH 2800 - DIFFERENTIAL GEOMETRY 1
MATH 2801 - DIFFERENTIAL GEOMETRY 2
MATH 2950 - METHODS IN APPLIED MATHEMATICS
MATH 2960 - COMPUTATIONAL FLUID MECHANICS
MATH 3070 - NUMRC SOLUTN NONLINEAR EQUATIONS
MATH 3071 - NUMRC SOLUTN PARTL DIFFT EQUA
MATH 3072 - FINITE ELEMENT METHOD
MATH 3075 - PARALLEL FINITE ELEMENT METHODS
MATH 3370 - MATHEMATICAL NEUROSCIENCE
MATH 3920 - NONLINEAR METH DIFFERNTL EQUATN
MATH 2601 - ADVANCED SCIENTIFIC COMPUTING 1
MATH 2602 - ADVANCED SCIENTIFIC COMPUTING 2
MATH 2603 - ADVANCED SCIENTIFIC COMPUTING 3
MATH 2604 - ADVANCED SCIENTIFIC COMPUTING 4
MATH 2900 - PARTIAL DIFFERENTIAL EQUATIONS 1
MATH 2901 - PARTIAL DIFFERENTIAL EQUATIONS 2
MATH 2920 - ORDINARY DIFFERENTIAL EQUATNS 1
MATH 2921 - ORDINARY DIFFERENTIAL EQUATNS 2
ME 2001 - DIFFERENTIAL EQUATIONS
ME 2002 - LINEAR AND COMPLEX ANALYSIS
STAT 2220 - APPLIED REGRESSION
STAT 2661 - LINEAR MODELS THEORY 1
Electrical Engineering/Information Science
ECE 2646 - LINEAR SYSTEM THEORY
ECE 2671 - OPTIMIZATION METHODS
ECE 3648 - NON-LINEAR SYSTEM THEORY
ECE 3650 - OPTIMAL CONTROL
ECE 2521 - ANALYSIS STOCHASTIC PROCESSES
ECE 2523 - DIGITAL SIGNAL PROCESSING
ECE 3526 - MODERN SPECTRAL ESTIMATION
Bioimaging and Signals Track

Bio-Imaging and Signals Track

The Bio-Imaging and Signals track is geared towards students with interests in any of the following areas:

1. Development and application of imaging devices;
2. Signal and image processing methods;
3. Biological/biomedical signal acquisition and analysis;
4. Computational modeling of biomedical signals and systems;
5. Biological/biomedical control systems; and/or

This track may be particularly attractive to students with undergraduate degrees in bioengineering/biomedical engineering; electrical engineering; computer science and engineering; math; and/or physics, but it is open to all bioengineering graduate students.
Students who have not had "signals and systems" and/or "linear systems" courses at the undergraduate level, similar to BIOENG 1320, ECE 1552 or MEMS 1014 offered at Pitt, may find that they lack the prerequisites for many of the track courses. Moreover, knowledge of the fundamentals of signals and systems provided in these courses will be required to pass the Preliminary Exam in the Bioimaging and Signals Track. Accordingly, students lacking this background are strongly encouraged to audit or take one of these three courses prior to taking the prelim exam in the late Spring of the 1st year. (Note that undergraduate courses do not fulfill graduate degree requirements.)

Students in the Bioimaging and Signals Track must complete 9 credits (3 different graduate level courses) in order to satisfy track requirements. At least one of these courses must be in the "bio-imaging" area, and at least one must be in the "signals and systems" area, as follows:

**Signals and systems course requirements (choose at least one):**

- BIOENG 2005 - RADIOFREQUENCY MEDICAL DEVICES AND APPLICATIONS OF ELECTROMAGNETICS IN MEDICINE
- ECE 2523 - DIGITAL SIGNAL PROCESSING
- ECE 2646 - LINEAR SYSTEM THEORY

**Bio-imaging course requirements (choose at least one):**

- BIOENG 2330 - BIOMEDICAL IMAGING
- BIOENG 2383 - BIOMEDICAL OPTICAL MICROSCOPY
- BIOENG 2505 - MULTI MODAL BIOMEDICAL IMAGING TECHNOLOGIES: FUNCTIONAL, MOLECULAR AND HYBRID IMAGING TECHNIQUES
- BIOENG 2600 - NEUROIMAGING
- BIOENG 2630 - METHODS IN IMAGE ANALYSIS

The third track course may be selected from the lists above, or from the list below of the variety of bioimaging and signals courses available through Pitt and CMU that fulfill track requirements. However, the list is by no means comprehensive, and students are free and encouraged to explore course offerings from other science and engineering departments, at Pitt and CMU, including Electrical and Computer Engineering; Computer Science; Physics; and Neuroscience. Coupled with two additional open electives, the track requirements provide flexibility for students, in consultation with their research mentor, to design an appropriate curriculum of graduate study to complement their research.

**Possible courses for the 3rd required track course:**

*Note: courses not listed here require pre-approval by the Track Coordinators in order to fulfill track requirements:*

- BIOENG 2005 - RADIOFREQUENCY MEDICAL DEVICES AND APPLICATIONS OF ELECTROMAGNETICS IN MEDICINE
- BIOENG 2045 - COMPUTATIONAL CASE STUDIES IN BIOMEDICAL ENGINEERING
- BIOENG 2186 - NEURAL ENGINEERING
- BIOENG 2330 - BIOMEDICAL IMAGING
- BIOENG 2383 - BIOMEDICAL OPTICAL MICROSCOPY
- BIOENG 2505 - Multimodal Biomedical Imaging Technologies: Functional, Molecular, and Hybrid Imaging Techniques
- BIOENG 2515 - Cardiovascular System-Dynamics and Modeling
- BIOENG 2600 - Neuroimaging
Molecular, Cellular, and Systems Engineering (MCSE) Track

This is a newly established Bioengineering graduate track (as of Sep 1, 2015). Faculty research interests in this track are quite broad including but not limited to fundamental understanding of cellular processes (example: cell migration, cell adhesion, cell cycle control) in physiology and pathology (example: cancer, sickle cell disease), stem cell engineering, tissue morphogenesis, vascular engineering, modeling of signal transduction and cardiac mechanics. Students in this track are expected to have core competency in either cell biology or physiology and biomedical imaging. The following curriculum enables the students in this track to meet the core competency criteria and expand their knowledge in bioengineering, computational biology and molecular regulation or deregulation of biological events in physiology and pathology. Note that in addition to the following category of courses, students in this track will need to satisfy their general requirements in math, statistics, ethics, and electives as mandated by the graduate program.

All listed courses are 3 credits unless specified otherwise

Life Science (6 credits): At least one cell biology or physiology course

- BIOENG 2520 - MOL CELL BIOLOGY & BIOPHYSC 1
- MSCBMP 2830 - CELL AND MOLECULAR PHYSIOLOGY
- MSNBIO 2070 - HUMAN PHYSIOLOGY

Track Courses (9 credits):

Course #1 - Category 1: Bioimaging

- BIOENG 2505 - MULTI MODAL BIOMEDICAL IMAGING TECHNOLOGIES: FUNCTIONAL, MOLECULAR AND HYBRID IMAGING TECHNIQUES
- BIOENG 2383 - BIOMEDICAL OPTICAL MICROSCOPY
- BIOENG 2630 - METHODS IN IMAGE ANALYSIS
- MSCBMP 2860 - MULTIPARAMETRIC MICROSCPC IMAGNG
- MSCBMP 2885 - IMAGING CELL BIOLOGY IN LIVING SYSTEMS

Course #2 - Category 2: Analytical/ Engineering / design courses

- CMU 02-730/MSCBIO /CMPBIO 2040 - CELLUAR AND SYSTEMS MODELING
- BIOENG 2515 - CARDIO SYSTM DYNAMICS & MODELING
- BIOENG 2040 - TRANSPORT PHENOMENA FOR BIOMEDICAL AND CHEMICAL ENGINEERS
- BIOENG 2810 - BIOMATERIALS & BIOCOMPATIBILITY
- MSCBIO 2030/CMPBIO 2030 - INTRODUCTION TO COMPUTATIONAL STRUCTURAL BIOLOGY
- MSCMP 3780 - SYSTEMS APPROACH INFLAMMATION

Course #3 - Either one additional course from category 2 or one from the following list:

1. MSCMP 3750 - ANGIOGENESIS
   - MSMPHL 2360 - BIOLOGY OF SIGNAL TRANSDUCTION
   - MSCMP 3710 - CANCER BIOLOGY AND THERAPEUTICS
   - MSCMP 3740 - STEM CELLS
   - MSCMP 2730 - MOLEC MECHS TIS GROWTH & DIFFRN
   - MSCMP 3770 - CELL THERAPY
   - MSCMP 3735 - EXTRACELLULAR MATRIX IN TISSUE BIOLOGY AND BIOENGINEERING
Tissue Engineering and Regenerative Medicine (TERM) Track

The PhD track in Tissue Engineering and Regenerative Medicine (TERM) prepares the students for a career in cutting edge research and development of cell- and biomaterial-based medical products. The MPE track introduces students to the use of cells, materials, biochemical and biomechanical factors in the development of functional substitutes that restore, maintain, or improve tissue or organ function. The students can expect to apply engineering principles to a diverse range of medical fields with the goal of solving critical clinical challenges.

Engineering Track Course - one of your required track courses must be taken from one of the courses below:

- BIOENG 2186 - NEURAL ENGINEERING
- BIOENG 2040 - TRANSPORT PHENOMENA FOR BIOMEDICAL AND CHEMICAL ENGINEERS
- CHE 2301 - FUNDAMENTAL TRANSPORT PROCESSES 1
- BIOENG 2633 - BIOMECHANICS 4: BIOMECHANICS OF ORGANS, TISSUES, AND CELLS
- BIOENG 2525 - APPLIED BIOSTATISTICS
- CMU 42624 - Biological Transport and Drug Delivery (this class is offered at Carnegie Mellon University and can be taken through the PCHE Cross-Registration process)

TERM track courses:

- BIOENG 2016 - FUNDAMENTAL PRINCIPLES OF BIODEGRADABLE
- BIOENG 2165 - MEDICAL PRODUCT ENTREPRENEURSHIP
- BIOENG 2633 - BIOMECHANICS 4: BIOMECHANICS OF ORGANS, TISSUES, AND CELLS
- BIOENG 2220 - CARDIO BIOMAT & TISSUE ENGRG
- BIOENG 2230 - CARDIO ORGAN REPLACEMENT
- BIOENG 2250 - CARDIO CLINICAL INTERNSHIPS (Special Permission is required)
- BIOENG 2040 - TRANSPORT PHENOMENA FOR BIOMEDICAL AND CHEMICAL ENGINEERS
- BIOENG 2515 - CARDIO SYSTM DYNAMICS & MODELING
- BIOENG 2540 - NEURAL BIOMATERIALS AND TISSUE ENGINEERING
- BIOENG 2620 - INTRODUCTION TO TISSUE ENGINEERING
- BIOENG 2630 - METHODS IN IMAGE ANALYSIS
- BIOENG 2810 - BIOMATERIALS & BIOCOMPATIBILITY
- BIOENG 3020 - DESIGN AND SYNTHESIS OF BIOMEDICAL MATERIALS
- BIOENG 3025 - VASC BIOMECH & ROLE IN PATHOBIOL
- BIOENG 3600 - FORCES THAT SHAPE ORGANS: SYSTEMS BIOLOGY OF ORGANOGENESIS
- MSCMP 2730 - MOLEC MECHS TIS GROWTH & DIFFRN
- MSCMP 3740 - STEM CELLS
- MSCMP 3750 - ANGIOGENESIS
Neural Engineering (NE) Track

Neural engineering is an exciting new field, which applies engineering techniques to understand, repair, replace, enhance, or otherwise exploit the properties of neural systems. The neural engineering track is designed to prepare the students for the fundamental understanding of both neuroscience and engineering principles.

This graduate track has a specific menu of courses to satisfy the "Life Science" and "Track Courses" requirement for the Ph.D.

**Life Science Requirements:** neural track students are required to take one cellular level and one systems level neuroscience course to fulfill their life science requirement.

For molecular neuroscience, choose between 1) NROSCI 2100 and NROSCI 2101 (Cellular and Molecular Neurobiology I and II, 8 credits) and 2) CMU 03-762 (Advanced Cellular Neuroscience, 4 credits); both are offered in the Fall.

For systems neuroscience, choose between 1) NROSCI 2102 (Systems Neurobiology, 6 credits) and 2) CMU 03-763 (Systems Neuroscience, 4 credits); both are offered in the Spring.

Students without a biology background need to take basic biology courses (e.g. BIOENG 2520, Fall) before taking these advanced neuroscience courses. Students who have taken graduate-level equivalent neuroscience courses can petition to take other more advanced life science courses. These courses are typically taken at the first year. Students without a biology background will need to take remedial biology courses (e.g. BIOENG 2520, Fall) before taking NROSCI 2100, NROSCI 2101 and NROSCI 2102.

**Track Courses Requirement:** please select at least three track courses from the following courses:

- BIOENG 2186 - NEURAL ENGINEERING
- BIOENG 2540 - NEURAL BIOMATERIALS AND TISSUE ENGINEERING
- BIOENG 2600 - NEUROIMAGING
- BIOENG 2615 - INTRODUCTION TO NEURAL ENGINEERING
- BIOENG 2630 - METHODS IN IMAGE ANALYSIS
- BIOENG 2650 - LEARNING & CONTROL OF MOVEMENT
- BIOENG 2810 - BIOMATERIALS & BIOCOMPATIBILITY
- NROSCI 2005 - COGNITIVE NEUROSCIENCE
- NROSCI 2011 - FUNCTIONAL NEUROANATOMY
• NROSCI 2012 - NEUROPHYSIOLOGY
• NROSCI 3059 - TUTORIAL BIOLOGICAL BASES LEARNING
• MSNBIO 2632 - ADVANCED NEUROPHYSIOLOGY
• MATH 3375 - COMPUTATIONAL NEUROSCIENCE METHODS
• ECE 2695 - SPECIAL TOPICS: ADAPTIVE CONTROL
• ECE 3650 - OPTIMAL CONTROL
• CMU 10-601 - MACHINE LEARNING
• CMU 15-883 - COMPUTATIONAL MODELS OF NEURAL SYSTEMS
• CMU 42-590 / 18-699 - NEURAL SIGNAL PROCESSING
• CMU 36-746 - STATISTICAL METHODS FOR NEUROSCIENCE (Can be used as a track course and can possibly be used to fulfill the statistics requirement. Please see the list of Approved Statistics Courses, and ask the Graduate Coordinator if you have any questions about this requirement.)
• CMU 86-595 / 42-595 - NEURAL DATA ANALYSIS

Elective Courses Requirement: a minimum of 6 credits are required in this category. By taking the track-specific life science courses, (total of 14, or 12 or 10 credits, depending on which option you take) the students in this track would satisfy the 6 life science credits with extra credits that can be counted as elective credits. Any additional graduate level courses approved by the advisor can be considered as electives.

Center for Neural Basis of Cognition (http://www.cnbc.cmu.edu/): the majority of NE track students are members of CNBC and participate in the CNBC graduate training program (http://www.cnbc.cmu.edu/training/). All three of the CNBC core courses can be considered track or elective courses. If you are in CNBC, you must satisfy both BIOENG and CNBC requirements before graduation.

For more information, please contact the Track Coordinator, Professor Tracy Cui. A list of faculty doing research in the area of neural engineering can be found at the Neural Engineering Program Web site (http://www.engineering.pitt.edu/neuro/).

Medical Product Engineering (MPE) - PhD Track

The PhD track in Medical Product Engineering (MPE) emphasizes preparation for an industrial or academic career in medical product research and development. The MPE track introduces students to principles of engineering innovation targeted to the identification of and the solution to important challenges and unmet clinical needs in health care technology and delivery. The program of study emphasizes education in medical product design and development, the development of advanced engineering skills, and knowledge of cellular and systems level physiology pertinent to the healthcare field in which the student is doing research.

Life Science Requirements (2 courses, 6 credits)

MPE track students are required to take one cellular level physiology course and one systems level physiology course to satisfy their Life Science Requirement. These courses should be chosen based on a student's interest and research from the following list:

Cellular Level

• BIOENG 2520 - MOL CELL BIOLOGY & BIOPHYS 1
• MSCBMP 2830 - CELL AND MOLECULAR PHYSIOLOGY
• NROSCI 2002 - NEUROSCIENCE 2

Systems Level

Any systems (organ) level physiology course. Must be approved by track coordinator. Some examples not requiring approval include:

• BIOENG 2022 - CARDIOVASCULAR DYNAMICS
• BIOSC 2070 - IMMUNOLOGY
• HRS 2771 - FUNCTIONAL ANATOMY AND KINESIOLOGY
• NROSCI 2011 - FUNCTIONAL NEUROANATOMY
• NROSCI 2070 - HUMAN PHYSIOLOGY
• NROSCI 2102 - SYSTEMS NEUROBIOLOGY
Track Courses Requirement (3 courses, 9 credits)

- BIOENG 2150 - MEDICAL PRODUCT IDEATION
- BIOENG 2151 - MEDICAL PRODUCT DEVELOPMENT

The third track course elective must be selected from the following list based on the student's interest and research:

- BIOENG 2630 - METHODS IN IMAGE ANALYSIS
- BIOENG 2633 - BIOMECHANICS 4: BIOMECHANICS OF ORGANS, TISSUES, AND CELLS
- BIOENG 2055 - BIOMEDICAL FLUIDS MECHANICS
- BIOENG 2230 - CARDIO ORGAN REPLACEMENT
- BIOENG 2330 - BIOMEDICAL IMAGING
- BIOENG 2515 - CARDIO SYSTM DYNAMICS & MODELING
- BIOENG 2186 - NEURAL ENGINEERING
- CHE 2301 - FUNDAMNTL TRANSPORT PROCESSES 1
- ECE 2523 - DIGITAL SIGNAL PROCESSING
- ECE 2654 - DIGITAL CONTROL SYSTEMS
- CMU 42- 698C Introduction to Biomedical Signal Processing
- CMU 42-624 Biological Transport and Drug Delivery

Electives (2 courses, 6 credits)

Students can take any two appropriate courses for their electives but the following courses are highly recommended:

Any track course elective above not already taken

- BIOENG 2165 - MEDICAL PRODUCT ENTREPRENEURSHIP
- BIOENG 2170 - CLINICAL BIOENGINEERING
- BIOENG 2171 - MEDICAL PRODUCT PROTOTYPING
- BIOENG 2230 - CARDIO ORGAN REPLACEMENT
- BIOENG 2703 - REHABILITATION ENGINEERING DSGN
- BIOENG 2810 - BIOMATERIALS & BIOCOMPATIBILITY BIOENG 3020 - DESIGN AND SYNTHESIS OF BIOMEDICAL MATERIALS
- BSEO 2531 - ENTREP & NEW VENTURE INITIATION
- BSPP 2111 - COMMERCIALIZING NEW TECHNOLOGIES
- ECE 2646 - LINEAR SYSTEM THEORY
- ENGR 2051 - PRODUCT REALIZATION
- ME 2045 - LINEAR CONTROL SYSTEMS
- ME 2080 - INTRO MICROELECTROMECHANICAL SYS
- IE 2003 - ENGINEERING MANAGEMENT
- IE 2006 - INTRO TO MANUFACTURING SYSTEMS
- IE 2012 - MANUFACTURE OF STRUCTURAL NANOMATERIALS
- IE 2039 - ENTREPRENEURSHIP FOR ENGINEERS
- IE 2051 - COMPUTER AIDED MANUFACTURING
- IE 2076 - TOTAL QUALITY MANAGEMENT
- IE 2098 - FINITE ELEMENT ANALYSIS IN PRODUCT DESIGN

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DAVID SANCHEZ, Assistant Professor, Civil and Environmental Engineering, PhD, University of Pittsburgh

WISSAM SAIDI, Assistant Professor, Mechanical Engineering and Materials Science, PhD, Ohio State University

DAVID SCHMIDT, Assistant Professor, Mechanical Engineering and Materials Science, PhD, Carnegie Mellon University

JOHN SEBASTIAN, Professor of Practice, Civil and Environmental Engineering, MBA, University of Pittsburgh

ERVIN SEJDIC, Assistant Professor, Electrical and Computer Engineering, PhD, Columbia University

NITIN SHARMA, Assistant Professor, Mechanical Engineering and Materials Science, PhD, University of Florida

JASON SHOEMAKER, Assistant Professor, Chemical and Petroleum Engineering, PhD, University of California, Santa Barbara

SANJEEV G. SHROFF, Chair, Distinguished Professor and Gerald E. McGinnis Chair, Bioengineering, PhD, University of Pennsylvania

LARRY J. SHUMAN, Senior Associate Dean, Swanson School of Engineering; Distinguished Professor, Industrial Engineering, PhD, The Johns Hopkins University

WILLIAM S. SLAUGHTER IV, Associate Professor and Undergraduate Director, Mechanical Engineering and Materials Science, PhD, Harvard University

PATRICK SMOLINSKI, Associate Professor, Mechanical Engineering and Materials Science, PhD, Northwestern University

WILLIAM E. STANCHINA, Professor, Electrical and Computer Engineering, PhD, University of Southern California

GEORGE DEWITT STETTEN, Professor, Bioengineering, PhD, University of North Carolina

SUSHENG TAN, Assistant Professor, Electrical and Computer Engineering, PhD, Chinese Scientific Academy

ALBERT C. F. TO, Associate Professor and CNG Faculty Fellow, Mechanical Engineering and Materials Science, PhD, University of California at Berkeley

MORTEZA A.M. TORKAMANI, Associate Professor, Civil and Environmental Engineering, PhD, University of California at Los Angeles

GELSEY TORRES, Assistant Professor, Bioengineering, PhD, Georgia Institute of Technology and Emory University

LUIS E. VALLEJO, Professor, Civil and Environmental Engineering, PhD, University of Wisconsin

JONATHAN VANDE GEEEST, Professor, Bioengineering, PhD, University of Pittsburgh

JULIE M. VANDENBOSSCHE, Associate Professor, Civil and Environmental Engineering, PhD, University of Minnesota
SACHIN S. VELANKAR, Associate Professor, Chemical and Petroleum Engineering, PhD, University of Delaware

OLEG VELIKOHATNYL, Assistant Professor, Bioengineering, PhD, Institute of Strength Physics and Materials Science of Russian Academy of Sciences

GÖTZ VESER, Nickolas A. DeCecco Professor, Chemical and Petroleum Engineering, PhD, Fritz-Haber-Institute of the Max-Planck-Society

NATASA VIDIC, Assistant Professor, Industrial Engineering, PhD, University of Pittsburgh

RADISAV D. VIDIC, Chair William Keppler Whiteford Professor, Civil and Environmental Engineering, PhD, University of Cincinnati

JEFFREY S. VIPPERMAN, Professor and Vice Chair, Mechanical Engineering and Materials Science, PhD, Duke University

DAVID VORP, Associate Dean for Research, and John A. Swanson Professor, Bioengineering, PhD, University of Pittsburgh

GUOFENG WANG, Associate Professor, Mechanical Engineering and Materials Science, PhD, California Institute of Technology

QING-MING WANG, Professor and ME Graduate Director, Mechanical Engineering and Materials Science, PhD, Pennsylvania State University

YADONG WANG, William Keppler Whiteford Professor, Bioengineering, PhD, Stanford University

DOUGLAS WEBER, Associate Professor, Bioengineering, PhD, Arizona State University

JUSTIN WEINBAUM, Assistant Professor, Bioengineering, PhD, Washington University in St. Louis

JOHN WHITEFFOT, Assistant Professor, Mechanical Engineering and Materials Science, PhD, University of Michigan-Ann Arbor

JÖRG M. WIEZOREK, Professor, Mechanical Engineering, PhD, University of Cambridge

CHRISTOPHER E. WILMER, Assistant Professor, Chemical and Petroleum Engineering, PhD, Northwestern University

SAVIO L.Y. WOO, University Professor of Bioengineering, PhD, University of Washington

SYLVANUS N. WOSU, Associate Dean for Diversity; Associate Professor, Mechanical Engineering and Materials Science, PhD, University of Oklahoma

FENG XIONG, Assistant Professor, Electrical and Computer Engineering, PhD, University of Illinois

WEI XIONG, Assistant Professor, Mechanical Engineering and Materials Science, PhD, Massachusetts Institute of Technology

JUDITH C. YANG, William Keppler Whiteford Professor, Chemical and Petroleum Engineering, PhD, Cornell University

JUN YANG, Associate Professor, Electrical and Computer Engineering, PhD, University of Arizona

VICTOR YASHIN, Assistant Professor, Chemical and Petroleum Engineering, PhD, Moscow State University

QIANG YU, Assistant Professor, Civil and Environmental Engineering, PhD, Northwestern University

BO ZENG, Assistant Professor, Industrial Engineering, PhD, Purdue University

MIN HEE YUN, Associate Professor, Electrical and Computer Engineering, PhD, Arizona State University

XUDONG ZHANG, Associate Professor, Mechanical Engineering and Materials Science, PhD, University of Michigan
School of Health and Rehabilitation Sciences

Welcome to The School of Health and Rehabilitation Sciences (SHRS)

The School of Health and Rehabilitation Sciences (SHRS) offers educational programs leading to the following graduate degrees and certificates:

**Accelerated Programs:**

Coordinated BS-MS in Nutrition and Dietetics

**Master's Programs:**

Master of Science in Clinical Rehabilitation and Mental Health Counseling
Master of Science in Nutrition and Dietetics (Coordinated Master)
Master of Occupational Therapy (MOT)
Master of Arts (MA)/Master of Science (MS) in Communication Science and Disorders with concentrations in:

- Speech-Language Pathology
- Audiology

Master of Science degree program in Health and Rehabilitation Sciences with concentrations in:

- Health Information Systems
- Health Care Supervision and Management
- Physical Therapy
- Rehabilitation Counseling
- Rehabilitation Science and Technology
- Sports Medicine
- Wellness and Human Performance

Master of Science in Occupational Therapy
Master of Science in Physician Assistant Studies
Master of Science in Prosthetics & Orthotics

**Doctoral Programs:**

Professional doctoral degrees:

- Doctor of Audiology (AuD)
- Doctor of Occupational Therapy (OTD)
- Doctor of Physical Therapy (DPT)
- Doctor of Clinical Science (CScD) in Medical Speech-Language Pathology
- Doctor of Clinical Science (CScD) in Occupational Therapy

Doctor of Philosophy

- Communication Science and Disorders
- Rehabilitation Science

**Certificate Programs:**

SHRS offers two certificate programs for graduate students or for professionals who hold graduate degrees.

Advanced certificates through the Department of Rehabilitation Science and Technology

- Certificate in Assistive Technology
Certificate in Disability Studies
SHRS is affiliated with the University of Pittsburgh Schools of the Health Sciences and shares a close affiliation with the world-class University of Pittsburgh Medical Center (UPMC). The medical center comprises a variety of hospitals and clinical facilities that affords students a wealth of opportunities for professional experience.

The SHRS faculty ground their teaching upon research studies, clinical service and participation in their respective professional associations. Faculty research and service typically occurs within a multi-disciplinary collaboration in diverse health care and research environments. Consequently, both entry-level and advanced students are exposed to state-of-the-art curricula, which are continually reviewed from the perspective of new research findings, technological developments, changing public policy and accepted clinical and management practice.

Our students interact with role models and mentors who demonstrate the core values of their respective professions including commitment to:

- Respect for the inherent value, dignity and integrity of the patient, client and/or research subject;
- A service-oriented and personalized approach to health care and rehabilitation;
- Ethical behavior in all clinical, service and research interactions with patients, colleagues, employees and others.

**Philosophy of Graduate Education**

The faculty of the School of Health and Rehabilitation Sciences (SHRS) believes that it has a major responsibility in graduate education to broaden the perspectives and awareness of students in the health professions toward high standards of scholarship and recognition of its relevance to technological and human needs.

Graduate programs provide depth in a substantial area of the student's profession and foster critical thinking through a variety of scholarly and creative activities thereby generating an atmosphere of scientific inquiry. These substantive areas include the knowledge of the scientific basis for the development of advanced clinical expertise within the professions represented in the School. An equally important function is to encourage health professionals to be sensitive to the needs of the human beings they are serving and to adapt their methods to the changing social, economic and technological environments in which they practice. Accordingly, these professionals should develop the capability to perform newly emerging and expanding roles of advanced clinical services, research, teaching and administration in the health care systems, advancing the frontiers of their particular field of expertise.

On the assumption that the accumulation and mastery of basic factual knowledge have been accomplished, graduate education focuses on synthesis and integration to allow for new systemic insights into the application and extension of that knowledge. The linkage of various educational experiences with research projects enhances problem-solving skills. Through interdisciplinary and multi-disciplinary didactic, clinical and research experiences, individual professional identity is fostered, while the ability to function both on an independent and collaborative level with colleagues from other disciplines is enhanced.

**Admission Information**

**Contact Information**

Office of Admissions  
School of Health and Rehabilitation Sciences  
4020 Forbes Tower  
412-383-6558  
Fax: 412-383-6535  
E-mail: admissions@shrs.pitt.edu  
Website: www.shrs.pitt.edu

**Application Procedures**
Each graduate and doctoral program at SHRS has its own specific list of application requirements and instructions. We utilize various application portals for admission including the ApplyYourself Application Network, which is operated through the university, and various CAS portals (centralized application systems) which are unique application portals for specific professions.

The SHRS programs that utilize CAS are:

- Communication Science and Disorders (MA/MS and AuD) (CSDCAS https://csdcas.liaisoncas.com)
- Doctor of Physical Therapy (PTCAS http://www.ptcas.org/)
- Doctor of Occupational Therapy (OTCAS https://otcas.liaisoncas.com)
- Physician Assistant Studies (CASPA https://caspa.liaisoncas.com)
- Prosthetics & Orthotics (OPCAS https://portal.opcas.org/)

The remaining SHRS graduate and doctoral programs utilize the Apply Yourself Application Network

Clinical Rehabilitation and Mental Health Counseling
Coordinated BS-MS and Coordinated Master in Nutrition and Dietetics
Master of Science in Health and Rehabilitation Sciences:
- Health Care Supervision and Management
- Health Information Systems
- Neuromuscular or Musculoskeletal Physical Therapy
- Rehabilitation Science and Technology
- Rehabilitation Counseling
- Sports Medicine
- Wellness and Human Performance

Master of Science in Occupational Therapy
Doctor of Clinical Science in Medical Speech-Language Pathology
Doctor of Clinical Science in Occupational Therapy
PhD in Communication Science
PhD in Rehabilitation Science

*Applicants for the Master of Occupational Therapy (MOT) program should contact the OT Department

Admissions Process for International Students:

SHRS is a globally diverse community with students from over 20 countries, including Canada, China, Colombia, Ghana, Greece, India, Indonesia, Korea, Mexico, Saudi Arabia, Singapore, Switzerland, Taiwan, and Thailand.

As noted above, because each program has its own specific requirements, it is encouraged that international applicants review these requirements (including CAS programs).

In addition to general admission requirements, SHRS has specific requirements for international applicants that are noted below.

Application Deadlines

Fall admission: April 15*
Spring admission: September 1
Summer admission: February 1

*Please note that if a program deadline is prior to the deadline above you must submit your application by the program deadline.

Academic Credential Evaluations

International applicants applying to the School of Health and Rehabilitation Sciences (SHRS) are required to have their academic credentials evaluated by one of the agencies listed below:
The Academic Credential Evaluation must be submitted along with your application. A course by course evaluation including a grade point average equivalent is required. A final transcript or diploma showing completion of the undergraduate degree must be submitted prior to starting the program. If an international student has earned an undergraduate or graduate degree in the United States, this evaluation is not required.

**Verification of English Language Proficiency**

The University of Pittsburgh accepts TOEFL or IELTS test scores to verify English Language Proficiency.

**TOEFL**

Minimum TOEFL scores accepted are:

- 100 on the internet based test, or 600 on the paper based test, for the PhD in Rehabilitation Science, Communication Science and Disorders (MA/MS), and Audiology (AuD) programs.
- 80 on the internet based test, or 550 on the paper based test, for all other SHRS graduate programs.

TOEFL scores must be sent electronically through ETS to institution code 2927.

**IELTS**

Minimum IELTS scores accepted:

- Overall Band 7.0 for the PhD in Rehabilitation Science, Communication Science and Disorders (MA/MS), and Audiology (AuD) programs.
- Overall Band 6.5 for all other SHRS graduate programs.

IELTS scores must be mailed to the address below:

SHRS Admissions Office
4020 Forbes Tower
University of Pittsburgh
Pittsburgh, PA 15260

IELTS score reports must be submitted in the original sealed envelope to be considered official.
Verification of English Language Proficiency is required unless the following apply:

- The applicant is a citizen of a country whose official language is English
- The applicant has completed a degree at a regionally accredited institution in the U.S.
- The applicant is not a citizen of a country whose official language is English but has completed a degree program at an institution outside of the U.S. where the language of instruction is English and where the official national language of the country in which the institution is located is English

**Process of Issuing Visa Documents**

For future international students - Once you have confirmed your admission to the School of Health and Rehabilitation Sciences (SHRS) at the University of Pittsburgh, SHRS will notify the Office of International Services (OIS) of your future attendance. OIS will then email you to complete the information required to either create or verify your immigration documents. This email will also include information about the timeline for receiving a new immigration document and international student orientation.

All international students should refer to the University's Office of International Services (OIS) website at http://www.ois.pitt.edu for information on admissions, orientation, immigration and visas, and life in Pittsburgh.

**Admission Status**

**Full Status**

The student has been admitted into a SHRS degree program. To maintain full graduate status, the student must achieve a minimum cumulative GPA of 3.000 (based on 4.000) in his/her graduate study. Students whose cumulative GPA drops below a 3.000 while in the program will be placed on academic probation (please see the Academic Probation policy in this handbook).

**Non-Degree Status**

Individuals who are seeking advanced degrees but who are unable to meet the deadline for filing all required credentials for admission may be granted temporary admission as non-degree students provided they present acceptable evidence concerning their qualifications for graduate study. Regular admission must be accomplished within the first term of registration as a non-degree student.

Applicants who do not wish to enroll in a degree program may apply for admission as non-degree students to take one or more courses of particular interest, if written permission is obtained from the course instructor. Non-degree students are permitted to take a total of six (6) credits. A non-degree student wishing to register for more than 6 credits must receive approval from the Department Chair/Program Director. Information concerning such requests should be directed first to the Director of Admissions, 4020 Forbes Tower, University of Pittsburgh, Pittsburgh, PA 15260 or via email at admissions@shrs.pitt.edu.

**Active Status**

Graduate students are required to register for at least 1 credit in the fall and spring terms. PhD students who have completed their course work and have successfully proposed their dissertation, must be enrolled in dissertation credits or FTDI (Full time Dissertation Study) in the fall and spring terms to maintain active status. All graduate students need to be enrolled in the term in which they plan to graduate.

**Inactive Status**

A student who has not registered for at least 1 credit or for full-time dissertation study during a 12- month period will be transferred automatically to inactive status. Inactive students cannot apply to graduate or take Preliminary or Comprehensive Examinations. While on inactive status, a student is not eligible to use University facilities and should not expect to receive counseling by the faculty or active supervision by his/her advisor and committee.

**Reinstatement**

Readmission is not automatic nor does it necessarily reinstate the student to the academic status enjoyed prior to becoming inactive. Students must formally re-apply for admission and pay the application fee. If the requirements for successful completion of the specific graduate program in which the student was enrolled have changed during the period of non-enrollment, the re-admitted student may be required to meet the revised requirements.
of the program that are in effect at the time of readmission. This will be decided by the Department Chair of the student's particular program; for the doctoral program the decision will be made by the Associate Dean of Graduate Studies.

Upon readmission, the student's Plan of Study will be adjusted to meet the requirements at the time of readmission.

**Financial Information**

**Tuition and Fee Rates**

Tuition and fee rates are available on the Financial Information page in the University Catalog and the tuition chart is on-line at Graduate Tuition & Mandatory Fees.

**Full Tuition**

Graduate students registered for 9 to 15 credits in the Fall and Spring Terms are regarded as full-time students, and are assessed the current graduate "flat" tuition rate for their academic center.

Students will be charged per credit for each credit exceeding the maximum full-time credit limit.

**Summer Term**

All students are billed on a per-credit basis.

**Residency/Reduced Tuition**

Students who reside in the Commonwealth of Pennsylvania may be eligible for reduced tuition through state appropriations.

Eligibility is determined by criteria outlined in the University of Pittsburgh Guidelines for Determining Eligibility for Reduced Tuition Rates, available on-line at http://payments.pitt.edu/pa-tuition-rate-eligibility.

**Additional Fees**

**Lab Fees:** Lab courses may incur an additional fee to cover laboratory expenses. These fees will be charged to the student directly and will appear on the invoice generated by Student Accounts in addition to tuition and other fees each semester.

**Liability Insurance:** Students enrolled in a clinical education or practicum must carry liability insurance. Liability insurance is required for SHRS students and will automatically be included on the tuition bill.

**Financial Obligation of Students**

The University of Pittsburgh has the right to withhold services if a student defaults on any financial obligation until repayment arrangements have been made that are satisfactory to the office or department to which the debt is owed.

**Scholarships, Grants and Financial Aid**

If you are interested in applying for loans, scholarships, grants, or work study, you should call, or visit the University of Pittsburgh, Office of Admissions and Financial Aid, Alumni Hall, Pittsburgh, PA 15260, 412-624-PITT. The website for information is https://oafa.pitt.edu/

The website specifically for graduate students is: Graduate School Financial Aid Instructions.

**SHRS Scholarships and Awards**

General information on scholarship and awards can be found at: SHRS Financial Information Page. Information on merit, individual department and school wide scholarship and awards can be found at: Schoolwide Scholarships

Contact individual departments for information on scholarships and awards specific to your area of study.

**SHRS Academic Regulations**
Minimum Academic Standard

In addition to the University-wide regulations and standards detailed in the section on General Academic Regulations, each student in SHRS is expected to be familiar with these school-specific regulations and academic Standards:

- It is the student's responsibility to review her/his academic standing, to identify graduate program requirements and prerequisites for intended graduate program(s) and to monitor their completion.
- All required and prerequisite coursework must be taken for a grade, when letter grade option is available, unless approved by the Department Chair/Program Director.
- Students must receive a grade of C or better in all courses required by their program curriculum.
- Students who receive a grade below a C in a required course must repeat that course and attain a grade of C or better to graduate. (Note: University regulations state that a student may repeat any course in which a grade of B- or lower is received if an authorization to repeat the course is given by the student's adviser/faculty.)
- Students will not be permitted to register for a course until they attain a C or better in its prerequisites.
- Failure to receive an acceptable grade after the second opportunity to complete a required course may result in the student being dismissed from the program and SHRS.

Advising

Master and Clinical Doctorates

Master's students are assigned an advisor who must be a member of the SHRS faculty holding a regular, research, clinical, or adjunct appointment, and having at least a master's degree. The director of the program to which the student has been accepted selects advisors for SHRS graduate students. Students are notified of their advisor after their enrollment. It is the student's responsibility to contact the advisor to schedule an initial meeting.

Doctor of Philosophy

PhD students are assigned an academic advisor in the student's main area of specialization. The academic advisor and student will plan course work and other experiences to enable the student to meet program requirements and her/his academic goals.

Change of Advisor

If either the student or his or her assigned advisor prefers, the student can choose another advisor. The student must obtain a Change of Advisor form, located on the SHRS website under forms. The student must complete the form and secure the required signatures, and return the form to the Office of Student Services. As a general rule, students who have more than 50% of the credits required for graduation should not initiate change of advisor procedures.

More information on Advisor roles and responsibilities can be found in the SHRS Graduate Handbook.

Plan of Study

Every student in SHRS must have a Plan of Study, signed by academic/faculty advisor, on file with Student Services by the end of the first semester. Any revisions to the Plan of Study must be approved by the academic/faculty advisor or Department Chair and submitted to Student Services.

To be certified for graduation, students must have successfully completed all courses outlined in their final Plan of Study as well as any other requirements for the degree. A final Plan of Study must be on file in Student Services 4019 Forbes Tower.

Allowable Credits

Transfer Credits
The completion of requirements for advanced degrees must be satisfied through registration at the Oakland Campus of the University of Pittsburgh. Graduate students already enrolled may, when approved in advance by their Department Chair and the Dean, spend a term or more at another graduate institution to obtain training or experience not available at the University of Pittsburgh and transfer those credits toward the requirements for an advanced degree at the University of Pittsburgh. In such instances, neither the University nor any of its components are responsible for providing any financial assistance to the graduate student.

Transcripts certifying graduate courses completed at another institution prior to admission to the University of Pittsburgh should be submitted at the time of application, and will be evaluated for acceptability as transfer credits early in the student's graduate career by the advisor and Department Chair.

For **Master of Arts and Master of Science degrees**, no more than six (6) credits may be transferred. The Office of Student Services will enter the transfer credits on the student's transcript. Grades (and quality points) are not recorded for credits accepted by transfer.

For **Professional Master and Clinical Doctorate Degrees**, no more than one-third of the total number of required credits may be granted to a student as transfer credit for work done at another accredited graduate institution.

For all **Master and Clinical Doctorate** a maximum of six (6) credits in undergraduate courses (numbered 1000 and above) may be included as transfer credits in the Plan of Study.

For **Doctor of Philosophy** up to 30 credits taken at the graduate level (2000 & 3000 level courses) toward a master's degree may be transferred. In all cases, at least 36 credits must be completed as a PhD student at the University of Pittsburgh. No Undergraduate credits (1000 level course) may be applied towards the doctoral degree. All transfer credits must be submitted to and approved by the Associate Dean of Graduate Studies. Please note, credits transferred from another institution may not be used to substitute for credits of courses required in the degree study plan. For example, credits transferred for a statistics course taken at another institution will not count toward the 9 credits of statistics required in the PhD program here at the University of Pittsburgh. The student will still need to take 9 credits of statistics at the University of Pittsburgh.

Transfer credits will not be accepted for courses in which a grade lower than B (GPA = 3.000), or its equivalent, has been received. No credit is granted toward an advanced degree for work completed in extension courses, correspondence courses, or in the off-campus center or another institution unless those credits are approved for the equivalent graduate degrees at the institution, and provided that the institution has an accredited program.

### Credits Required

The number of credits required for the Master's degree varies among the departments within SHRS, but all departments require at least 30 credits. Many departments offer a variety of emphases. Individual departments should be contacted for the number of credits and Plan of Study specific to that department and focus.

### Undergraduate Courses in the Graduate Program

A maximum of six (6) credits in undergraduate courses (numbered 1000 and above) may be included in the *Plan of Study*.

### Grading Policy

All SHRS graduate programs adhere to the University's grading system and grading policies for graduate students. Please refer to the Office of the University Registrar on Grades or the University Catalog on Grading and Records.

### SHRS Policy and Procedure for G and I Grades

#### G & I (Incomplete) Grade Policy

SHRS (G) Grade Policy
The G grade signifies unfinished course work due to extenuating personal circumstances. Students assigned G grades are required to complete course requirements no later than one year after the term or session in which the course was taken.

Once the deadline has passed, the G grade will be changed automatically to a (NG) - No Grade. The NG grade will remain on the record and the student will be required to re-register for the course if it is needed to fulfill requirements for graduation.

Action required by the student and faculty member for a "G" grade:

- The student, instructor and advisor are to fill out a Completion Agreement of G Grade Credits Form (the form and the SHRS G grade Policy and instructions can be found on the SHRS website)
- A copy of this agreement will need to be submitted to Student Services, no later than the end of the add/drop period for the following term.
  If the following term is the summer term, then the add/drop deadline date is that of the whole summer term.

SHRS (I) Incomplete Grade Policy

The I grade indicates that the work of the course for which it is awarded has not been completed due to the nature of the course, clinical work, or incomplete research work in individual guidance courses or seminars. It is to be awarded only to students who have been doing the regular work of the course but who need more time than the term allows to complete the course work. That is, if extenuating circumstances ought to arise from the nature of the course work rather than from the student's personal difficulties (in which case a G grade is appropriate; see above).

All incomplete grades are expected to be completed by no later than the end of the next consecutive semester. It is the responsibility of the faculty member to clearly state to the student the expected due date.

- If the incomplete grade is given in the spring, it is expected to be completed by the end of the summer term in August.

Action required by the student and faculty member for a "I" grade:

- The student, instructor and advisor are to fill out a Completion Agreement of Incomplete Credits Form (the form and the SHRS I grade Policy and instructions can be found on the SHRS website)
- A copy of this agreement will need to be submitted to Student Services, no later than the end of the add/drop period for the following term.
  If the following term is the summer term, then the add/drop deadline date is that of the whole summer term.
  Student Services, will be following up on any Incompletes grades that are not changed within the expected time frame at the end of every term.

Satisfactory/No Credit (S/NC) grading option

Prerequisite and required courses must be taken for a letter grade when available, and a student must earn a C or better.

More information on Grading Policies can be found in the SHRS Graduate Handbook.

Comprehensive Examination

Comprehensive Examinations are required for many graduate programs in SHRS. Successful completion of the Comprehensive Examination is needed for the student to demonstrate mastery of his/her field of graduate study. Each individual department/program will specify the content and procedure for the scheduling, administration, and grading of the Comprehensive Examination. Please refer to individual program descriptions or handbooks for details of Comprehensive Examinations for each program.

Enrollment Status

Graduate students cannot enroll for more than (15) units without the dean's approval. Only an advisor or the University Registrar's Office can enroll you after you receive approval for the additional unit(s)

Graduate students registered for 9 to 15 credits in the Fall and Spring Terms are regarded as full-time students.

Students cannot enroll in courses that meet at the same time.
Monitored Withdrawal

After the add/drop period has ended, students may withdraw from a course that they no longer wish to attend by completing a Monitored Withdrawal Request form in the office of the school offering the course. Students must process the Monitored Withdrawal Request form within the first nine weeks of the term in the fall and spring. Because summer sessions vary in length, students should check the University's Academic Calendar for those deadlines. Students should check with the school offering the course for the last day to submit a Monitored Withdrawal Request form. The grade W will appear on the student's grade report and transcript. There is no financial adjustment to students' tuition or fee obligations involved in withdrawing from courses, but withdrawing may jeopardize satisfactory academic progress, financial aid, and assistantships or fellowships.

The form must be signed by the instructor of the course and be returned to the Director of Student Services, Registrar, 4024 Forbes Tower within the first nine weeks of the term in the fall and spring.

Late Withdrawal procedure

Procedure for an Appeal for Late Withdrawal

- After the Monitored Withdrawal deadline has passed, students may appeal to withdraw from a course by submitting an Appeal for Late Withdrawal. Form can be found on the SHRS website, under current students/forms.
- All appeals for late withdrawal must be for non-academic reasons, i.e. medical or family emergencies. If you are trying to withdraw without extenuating circumstances, your appeal will be denied.
  - Appeals must be submitted to the Dean's Office of the school offering the course, regardless of the student's home school.
  - Appeals for Late Withdrawal from SHRS courses should be submitted to 4024 Forbes Tower, to the Registrar, Kellie Beach.
- The appeal requires information on the class, including class number, catalog/course number, subject, and course title. This information can be found in your Student Center/PeopleSoft.
- The signature of the instructor-or an email from the instructor indicating the date of last attendance, grade earned, and acknowledgement of your withdrawal-is required. You must print and attach copies of the emails.
- Attach a typed statement explaining the extenuating circumstances which you feel merit consideration of withdrawal beyond the deadline.
- Please provide relevant documentation, such as certification from a doctor, hospital receipts, an obituary, etc.
  - Please address the documentation and the letter to SHRS, Associate Dean for Graduate Studies, Dr. Kelley Fitzgerald.
  - Please include your PeopleSoft ID and your University of Pittsburgh e-mail address on each submitted document.
  - Please sign and date each document.
- You will be notified of the Associate Dean's decision via your student email account.
- Appeals for late withdrawal must be submitted before the end of the 13th week of the semester. After the 13th week, students can only appeal to withdraw from the entire semester.
- If your request is approved and you accept the grade of "W" there is no tuition adjustment for withdrawing from the course.

Repetition of Courses

Consult your dean's office for the proper procedure of repeating a class and for information on how this will affect your grades and the calculation of your Grade Point Average (GPA). When you repeat a class, you must officially enroll and pay for the class again. University policy prohibits any student from attending a class without being officially enrolled for that class. A repeated course, has a notation appearing underneath the previous course taken designating that it is excluded from the GPA. The original course and grade will always remain on your record/transcript.

Students are only permitted to repeat a course once.

Note: Any grade earned in the repeated course will be recorded on the academic transcript, even if it is lower than the original grade.

- A sequence course may not be repeated for credit if the student passes a higher sequence course with a C or better grade.
- A student may not enroll in the same course at another institution and have that grade replace the original grade earned at the University.
The original course and grade remain on the transcript; however, the grade and credits originally earned are not counted in the calculation of the GPA.

The grade earned by repeating a course is used instead of the grade originally earned. Withdrawal (W), Repeat (R), and Audit/Non-Credit (N) grades reported for the repeated course will not be identified as a course repeat, and therefore the original grade earned will continue to be counted in the GPA.

Incomplete grades (G and I) are not identified as repeated courses until the coursework is completed.

Students seeking to repeat other non-SHRS (prerequisites, electives, etc.) courses will be permitted to do so at the discretion of the program director.

Statute of Limitations on Allowable Coursework

Masters:
The purpose of the statute of limitations is to ensure that a graduate degree from the University of Pittsburgh represents mastery of current knowledge in the field of study. All requirements for MA and MS degrees must be completed within a period of four consecutive calendar years from the student's initial registration for graduate study; all professional masters within five years (includes both full time and part time students). Dual degrees and joint degrees that require coursework in excess of 50 credit hours may be granted a longer statute of limitations by the University Council on Graduate Study.

PHD/Doctoral:
From the student's initial registration for graduate study, all requirements for the PhD degree must be completed within a period of 10 years or within eight years if the student has received transfer credits. A student who is unable to complete all degree requirements within a five-year period after passing the comprehensive examination may be re-examined at the discretion of the department or school. Programs for professional doctoral degrees, for which the majority of candidates pursue part-time study while working full-time within their chosen disciplines, may be granted a longer statute of limitations by the schools offering the degrees.

Extension:
Under exceptional circumstances, a candidate for an advanced degree may apply for an extension of the statute of limitations. The request must be approved by the department or departmental committee (master's or doctoral) and submitted to the Associate Dean of Graduate Studies for final action. Requests for an extension of the statute of limitations must be accompanied by a departmental assessment of the work required of the student to complete the degree as well as documented evidence of the extenuating circumstances leading to the requested extension. Students who request an extension of the statute of limitations must demonstrate proper preparation for the completion of all current degree requirements.

Resigning from the University for a Specific Term

If students decide to drop all of their courses after the add/drop period has ended and before 60 percent of the term or session has been completed, they must resign from the University for that term. Official resignation from the University requires students to contact the Student Appeals Office. Students have several options. They may resign in person, by mail, or by calling 412-624-7585, where students may leave a message 24 hours a day, including weekends and holidays. An R grade will appear on the student's academic transcript. Tuition is prorated from the date of the student's notification to the Student Appeals Office of the student's desire to resign, unless 60 percent of the term has been completed, in which case there is no refund.

After the 60 percent point of the term or session has passed, students who wish to terminate their registration may process a withdrawal from all classes only with the permission of their academic dean. If the reason for withdrawal is medical or psychological in nature, the academic dean may consult with the director of the Student Health Service prior to making a determination. There is no financial adjustment associated with this procedure, which results in the assignment of W grades for the courses.

Please visit the Student Payment center resignation page on the University of Pittsburgh website for more information.

Leave of Absence

Under special conditions, graduate students may be granted one leave of absence. A maximum leave of two years may be granted to doctoral students or one year to master's students. All requests for a leave of absence need to be put in writing to the Associate Dean of Graduate Studies, using the
**SHRS Request of Leave of Absence from a Graduate Program.** The length and rationale for the leave of absence must be approved by the Associate Dean. If approved, the time of the leave shall not count against the total time allowed for the degree (statute of limitations) being sought by the student.

To request of leave of absence, you must complete the "Request of Leave of Absence from a Graduate Program" form which can be found on the SHRS website under current students/forms. This form must be submitted to Student Services on the 4th floor of Forbes Tower for approval.

Note: If the reason for your leave is medical in nature, a formal note from a Doctor must be included with this form.

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**Academic Probation and Dismissal Policy**

Graduate students who have completed at least 9 credits and whose cumulative GPA falls below a 3.000 will be placed on academic probation and/or suspension and will receive written notification of this status. At this point it is the student's responsibility to meet with his or her advisor.

To be removed from academic probation, the student will need to achieve a cumulative GPA of 3.000 within his or her next two terms of study. Failure to do so may subject the student to recommendation for immediate dismissal from the program by the Department Chair, in collaboration with the Associate Dean of Graduate Studies.

Students who fail to demonstrate progress toward meeting graduation requirements in a timely manner may be placed on academic probation or recommended for dismissal from the program by the Department Chair, in collaboration with the Associate Dean of Graduate Studies. SHRS reserves the right to terminate a student at any time for academic or other reasons.

Dismissal from the program is at the discretion of the SHRS Dean. Notwithstanding the foregoing, in the event it is not mathematically possible for a student to remediate their cumulative program GPA within their next two terms of study the student may be immediately dismissed.

A student may appeal their dismissal with the University of Pittsburgh Provost office.

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**Graduation Requirements**

Graduation Requirements for a Graduate degree from SHRS are as follows:

- student must be considered an "active student" at time of graduation; s/he must have been registered for at least one credit at the University of Pittsburgh within the last three terms or sessions
- students may not enroll in courses outside the University of Pittsburgh in the semester they are graduating
- satisfactory completion of required credits
- minimum cumulative GPA 3.000
- the GPA will be calculated as a composite of all courses taken at the University of Pittsburgh and counting toward completion of the degree
- completion of all requirements for the program in which student has enrolled
- no outstanding D, F, G or I grades in a required course
- updated and approved Plan of Study on file in Student Services, 4019 Forbes Tower
- an application for graduation must be filed in the SHRS Office of Student Services, based on the deadlines determined for that term. Email notification of these deadlines will be sent to students in the prior term and will posted on the SHRS Graduation website. The Application for Graduation can be obtained in the Dean's office or on the SHRS Forms website.

A student with outstanding financial obligations to the University is not eligible to receive the diploma, official academic transcripts, or any certification of completion of the academic program.

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**Thesis and Non-Thesis Options and Procedures**

**Thesis Option**
A thesis is a written report of an investigative study conducted by the student during his/her graduate program. The completion of a thesis requires that the student has the necessary knowledge and skills to conduct a valid study and that the thesis project is the investigation of a research question appropriate to his or her focus of study. The thesis is usually a concluding experience in Master of Science programs and completed under the guidance of a research mentor.

Completion of a thesis may be required for specific graduate programs within SHRS. Students should refer to the specific program requirements to determine if a thesis is required for completion of his/her program. Thesis credits can be obtained in the following courses: HRS 2924, HRS 2925, and CSD 2000. Students should refer to his/her program requirements for specific guidelines for completing the thesis, the minimum number of thesis credits required, and for required courses.

**Non-Thesis Option**

Many SHRS graduate programs provide a non-thesis option as an alternative to completing a thesis. The non-thesis option is program-specific and reflects the culminating assignment to demonstrate the student's mastery of his/her area of study. Some programs require the student to complete the non-thesis option while others may give the student the opportunity to choose between completing a thesis or the non-thesis option. Students should refer to their home program/department for specific information on the non-thesis option.

**Scholarly Paper**

As part of the non-thesis option for a Master of Science degree, some programs/departments may require a scholarly paper. A scholarly paper is of publishable quality in a focused area. Examples of scholarly papers include, but are not limited to: substantial reviews of the literature on a particular topic, development of health care policies, or development of evidence-based treatment procedures. Students who complete this option must register for HRS 2926 Scholarly Paper for 1-6 credits depending on the requirements of his/her plan of study.

More information on Thesis and Non-Thesis options and Scholarly Paper can be found in the SHRS Graduate Handbook.

**Internships/ Clinical Education/ Independent Studies**

**Internships**

Overview:
An internship is a period of supervised, planned, practical experience providing an opportunity to apply previously learned skills or theories designed to complement the didactic phase of the academic program. The internship may be primarily clinical, teaching, or administrative in nature. Many programs require internship experiences, coordinated by the student's advisor or an identified Clinical Coordinator, who provides oversight regarding internship objectives and activities, administrative and contractual relationships with the site, and ensures that students meet all SHRS and site criteria.

**Clinical Internships**

Clinical learning experiences are an integral part of SHRS professional programs. Clinical learning experiences provide the student with the opportunity to apply his/her knowledge in a supervised environment to develop clinical skills and judgment.

**Clinical Education**

Clinical learning experiences are an integral part of SHRS professional programs. Clinical learning experiences provide the student with the opportunity to apply his/her knowledge in a supervised environment to develop clinical skills and judgment.
Independent Study - HRS 2999 or CSD 2990

Independent Study provides an opportunity for the student to complete an intense, self-designed project with faculty supervision in an area of special interest. A maximum of six (6) independent study credits may be accepted toward meeting degree requirements for the program.

More information on Internships, Clinical Education, Independent Studies can be found in the SHRS Graduate Handbook.

Graduate and Professional Student Association

The SHRS Graduate and Professional Student Organization (SHRS GPSO) is a member of the Graduate and Professional Student Government (GPSG) of the University of Pittsburgh. All full- time and part-time graduate students of SHRS who have active status, as defined by the School, and who are in good standing, as defined by the University, are members of the SHRS GPSG. Further information on becoming active in this organization can be obtained by sending an email to: shrssab@shrs.pitt.edu.

Doctor of Philosophy

SHRS offers a PHD program in Communication Science and Disorders (CSD) and Rehabilitation Science.

Doctor of Philosophy in Communication Science and Disorders (CSD)

The Department of Communication Science and Disorders (CSD) research doctoral program is oriented toward scientific inquiry in the discipline of communication science and disorders with an emphasis on basic and applied research training. Much of the CSD PhD program is individually tailored and designed to meet a variety of academic and professional goals. For Information on the CSD PHD degree, please see Communication Science and Disorders, PhD

Doctor of Philosophy in Rehabilitation Science

The mission of the PhD program in Rehabilitation Science is to advance the frontiers of knowledge underlying the practice of rehabilitation disciplines and professions through research, teaching, and professional development.

This PhD is an interdisciplinary degree. Students enter the program through the following SHRS departments or programs: Health Information Management, Occupational Therapy, Physical Therapy, Rehabilitation Counseling, Rehabilitation Science and Technology, and Sports Medicine. Upon degree completion, you will have mastered a specific area of expertise in rehabilitation science and carry an expansive core of related knowledge.

Contact Information:

Debby Keelan
Assistant to the Associate Dean of Graduate Studies
4022 Forbes Tower
Phone: 412-624-6538
Fax: 412-383-6555
Email: dkeelan@pitt.edu
www.shrs.pitt.edu

Program Summary
Program starts fall, spring or summer terms

- 8 years (with approved credit transfer) or 10 years (without credit transfer)
- 72 credits total required to graduate (some areas of focus may require more credits)

**The Primary Goals of the PhD program in Rehabilitation Science are to:**

1. Provide core content in theories and models of rehabilitation, disability and/or assistive technology that underpin rehabilitation science;
2. Provide in-depth, state of the science, content in basic, clinical, social, medical and/or engineering sciences that support the dissertation research;
3. Provide mentorship opportunities for immersion in rehabilitation science research laboratories, projects, and/or ongoing studies;
4. Prepare students to conduct and disseminate original research that will advance rehabilitation science;
5. Promote interdisciplinary research in preparation for becoming a research team member;
6. Promote knowledge, behaviors and skills consistent with the responsible conduct of research;
7. Provide opportunities to teach content in an area of expertise.

The doctoral degree in Rehabilitation Science is an interdisciplinary research degree offered by SHRS and not by individual departments within the school. Graduates of this program will have a specific area of expertise in rehabilitation science as well as a core of interdisciplinary knowledge related to this specific area. They will become the researchers, scholars, teachers, thinkers, and planners in the demanding and changing field of rehabilitation science.

**Areas of Study**

- Assistive technology
- Biomechanics
- Evidence-based practice and epidemiology of disability
- Functioning, disability and health
- Psychosocial, cultural, and behavioral aspects of rehabilitation and disability
- Health information systems and information technology related to health and rehabilitation sciences
- Neural basis of sensory and motor function and dysfunction
- Neuromuscular aspects of sports injuries

**Admission Requirements/ Application Process**

Applicants should have a strong interest in rehabilitation research as well as a master's degree in an area related to rehabilitation science. The exceptional student with a bachelor's degree, six or more credits of graduate course work, and compelling clinical/research experience in rehabilitation science will be considered.

Resources, including research mentors, must be available to enable the student to engage in a plan of study in the student's major area of interest in rehabilitation research. Therefore, it is important that there is a match between the research interests of an applicant and an SHRS graduate faculty member.

**Admission Requirements**

Successful applicants will have a minimum GPA of 3.0 (based on a 4.0 scale) in all college work; minimum scores at the 50th percentile on the revised verbal and quantitative GRE® revised General Test, and a minimum score of 3.5 on the Analytical Writing section of the GRE® revised. Students for whom English is a foreign language must have a minimum TOEFL score of 100 (internet), 600 (paper); or Band 7.0 on the IELTS (reading and writing modules).

**Application Requirements**

Applicants are required to submit the following:

- Completed SHRS on-line application form
- An essay stating career goals, specific research interests and experience, and clinical interests and experience;
- Three to five academics or work-related letters of recommendation (at least one academic reference must be included as well as a letter of support from the identified Research Mentor);
- A résumé, including work history, formal education, continuing education, licensing and certification, professional organizations, honors and awards, publications, presentations, and grants;
- Official transcripts from all colleges attended; transcripts must be sent directly from the institution to the University of Pittsburgh

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Applications are accepted at any time and Applicants are encouraged to apply at least 6 months prior to the term in which they will begin classes.

Applicants are evaluated by the PhD Admissions Committee. Admission to the program requires (1) the applicant to meet the standards for a PhD student in SHRS, and (2) that a faculty member of the PhD program has an opening for an additional PhD student and agrees to be the Academic Advisor for that applicant.

For more information about admission to the PhD program contact:

Office of Admissions
School of Health and Rehabilitation Sciences
4020 Forbes Tower
412-383-6558
Fax: 412-383-6535
E-mail: admissions@shrs.pitt.edu
Website: www.shrs.pitt.edu

Financial Aid

Financial assistance is often available from a variety of sources, including graduate student assistantships and teaching assistantships. These assistantships typically require 20 hours per week of research, teaching, or clinical service in exchange for a tuition, health insurance, and an annual salary. Other forms of financial assistance, including fellowships, may be available through individual faculty grants. Applicants interested in financial support should indicate this on their applications for admission. Acceptance into the PhD program does not assure that a student will be offered financial aid. Depending on the availability of financial aid, the offer of financial support to an applicant may be deferred until a later date. Since financial aid is limited, applicants who desire financial aid are encouraged to apply early.

Transfer Credits

If a student wishes to transfer credits, the student and the student's Academic Advisor must submit a Credit Transfer Request Form to Student Services during the first year of study. Transcripts verifying the graduate courses and course descriptions must accompany the petition. The student and student's Academic Advisor will be informed by the Associate Dean of Graduate Studies which courses are acceptable as transfer credits, and this information will be placed in the student's file. Based on University guidelines, students who transfer any credits from a master's degree must complete the PhD within 8 years; students who do not transfer credits must complete the PhD within 10 years.

Academic Advisor

Students admitted to the PhD program are assigned an Academic Advisor who is a member of the Graduate Faculty in SHRS. He/she will have research interests similar to the student's interests and will have agreed to be the student's Research Mentor.

The Academic Advisor and student will determine the Plan of Study for the student. They will also plan course work or other experiences to enable the student to demonstrate competency in the proposed content supporting the dissertation, as well as statistics/research methodology content in preparation for the Comprehensive Examination and Dissertation Proposal Defense. It is the responsibility of the Academic Advisor to provide advice to the student during the PhD program, especially with the following steps.

1. Petitioning the Associate Dean of Graduate Studies for transfer of credits
2. Preparing a Plan of Study outlining course work and dissertation credits leading to the PhD Degree
3. Locating research opportunities
4. Revising the Plan of Study as needed as the dissertation topic is formulated
5. Finding a Primary Research Mentor

Plan of Study

The student and Academic Advisor will prepare a tentative Plan of Study within the first term of enrollment. If a Plan of Study has not been submitted by the end of the first term, the student will not be permitted to enroll in the subsequent term. The Plan of Study Form can be obtained online on the SHRS website. The Plan of Study should include transfer credits, course work to date, future course work, and dissertation credits leading
A copy of the Plan of Study will be placed in the student's file. The Plan of Study should be reviewed each term at registration and updated as needed by the student and Academic Advisor. A final updated Plan of Study must be on file in the student's permanent file in Student Services in the term in which the student graduates, or the student cannot be certified by the Registrar for graduation.

More information regarding the following can be found in the PHD handbook on the SHRS website:

- SHRS Student Statistical Support
- Annual Review/Progress Reports
- Preliminary Examination
- Primary Research Mentor
- Comprehensive Examination
- Dissertation Proposal Defense
- Admission to Candidacy
- Dissertation
- Electronic thesis and Dissertation (ETD)
- Final Oral Defense of Dissertation
- Continued Use of Data After Leaving the University of Pittsburgh

Ombudsperson

SHRS has designated a person within SHRS to be the Ombudsperson.

The Ombudsperson is a person who handles complaints, serves as a mediator, and a spokesperson for the rights of a particular individual or group. The Ombudsperson in the School of Health and Rehabilitation Sciences (SHRS) will be a neutral contact person (Non-faculty) for students with whom they can engage in informal discussions to express concerns about conflicts and other issues that may arise during the course of their education that they believe are difficult to address with their academic department.

The Ombudsperson for SHRS is Kellie Beach, Director of Student Services, and Registrar. She can be reached at kbeach@pitt.edu to make an appointment. More information on the role of an Ombudsperson for SHRS can be found on the SHRS website under the Orientation page.

School of Health and Rehabilitation Science Faculty

SHRS Faculty

Programs and Course Offerings

Department of Communication Science and Disorders

Master of Arts and Master of Science Degrees in Communication Science and Disorders

The Communication Science and Disorders program provides students with a specialized academic education in communication processes and disorders, including disorders of speech, language, swallowing, and hearing, with a focus on the anatomical, physiological and cognitive mechanisms that subtend these pathologies, the knowledge and skills needed to critically evaluate empirical research, and clinical expertise in the diagnosis and treatment of individuals having communicative disorders.

The master's degree program has two concentrations: one in speech-language pathology, and one in audiology. There is also an option for meeting public school practice requirements. For students interested in the clinical practice degree in audiology, please see the section on the Doctor of Audiology (AuD) degree in this bulletin.
A research track (resulting in the Master of Science degree) in audiology and speech-language pathology is also available.

The Masters degree programs in speech-language pathology and audiology at the University of Pittsburgh are accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association, 2200 Research Boulevard #310, Rockville, MD 20850, 800-498-2071 or 301-296-5700.

**Contact Information**

Department of Communication Science and Disorders  
School of Health and Rehabilitation Sciences  
6035 Forbes Tower  
412-383-6540  
Email: csdadmissions@shrs.pitt.edu  
http://www.shrs.pitt.edu/CSD/

**General Admission Requirements (CSD MA/MS) Degree**

- A baccalaureate degree from an accredited institution. Applicants who do NOT have a CSD major will need to satisfactorily complete the prerequisite coursework listed below.
- A minimum overall and prerequisite GPA of 3.0 is required. However, a GPA of 3.5 or higher is strongly recommended.
- A grade below C- in a CSD major or prerequisite course is not acceptable and must be repeated. Applicants who do not meet the minimum requirements for admission may be considered if strong evidence of their ability to complete a graduate program is provided.
- Ability to satisfactorily perform all of the technical standards required for this profession.
- Graduate Record Examination scores (GRE-general). The GRE **must be within the past 5 years.**

**Prerequisite Coursework**

Applicants should have a minimum of one 3-credit course in each of the following topic areas:

- Anatomy and Physiology of Speech and Hearing
- Language Development
- Speech and Hearing Science
- Transcription Phonetics
- Linguistics

**ASHA Requirements**

Please note that, in order to be eligible for clinical certification by the American Speech-Language-Hearing Association, you must meet the standards specified by the Association's Council for Clinical Certification. This includes satisfactory completion of at least one 3-credit course in each of the following areas prior to starting the graduate program: Biological Sciences (Human Biology, Anatomy & Physiology), Physical Sciences (Physics, Chemistry), Behavioral Sciences (Sociology, Psychology), Statistics (not research design).

**Information for International Applicants**

All international degrees will need a credential evaluation. We only accept a 4-year bachelor's degree or an international degree that is equivalent as determined by one of the following transcript evaluators: International Consultants of Delaware, Educational Credential Evaluators Inc., or Joseph Silny & Associates. **We do NOT accept evaluations by World Education Services (WES).** The program's foreign transcript policies do not apply to study abroad coursework that is itemized on a US college or university transcript (study abroad is processed in the same way as US coursework). International applicants who have earned an undergraduate or graduate degree in the United States do not need a transcript evaluation.

International applicants whose native language is not English must complete a test of English Language Proficiency within 12 months of the due date of the application. Applicants from Quebec Province are required to submit TOEFL or IELTS scores; all other Canadian applicants are exempt from the English language proficiency requirement.

Your application for admission will not be reviewed until your credential evaluation and TOEFL scores are received by CSDCAS.
Doctor of Clinical Science (CScD) Degree in Medical Speech-Language Pathology

The CScD is an advanced clinical doctorate recommended for the student or clinician seeking to employ state of the art clinical excellence and leadership as a speech-language pathologist in settings such as modern primary, tertiary, or rehabilitation medical centers and academic institutions.

The primary objectives of the CScD program are to provide new and continuing graduate students and returning clinicians with advanced academic course work, clinical skills, case-based learning experiences, medical team rotations, and extensive mentored clinical practice. Graduates of this program will excel in their medical specialties and assume leadership roles. Graduates will be prepared for independent clinical practice in the medical setting and clinical faculty positions.

Students are expected to meet the eligibility requirements for application for both American Speech Language and Hearing Association certification (Certificate of Clinical Competence CCC-SLP) and Pennsylvania state licensure over the course of their studies. There is no dissertation project required for the CScD degree; however, students will demonstrate expertise in the critical analysis and application of scientific information.

Contact Information

CSD Administrator
Department of Communication Science and Disorders
School of Health and Rehabilitation Sciences
6035 Forbes Tower
412-383-6540
Fax: 412-383-6555
Email: csdadmissions@shrs.pitt.edu
www.shrs.pitt.edu/csd

Admission Requirements

A SLP MS/MA is required in order to fulfill the clinical component of this program.

Once your application is complete, it will be forwarded to the CSD Department for review by the CScD Admissions Committee.

Applicants will be required to participate in interviews addressing content knowledge and discussions of the program.

The department has a rolling admissions process with an application deadline of December 1st to begin the program the following summer term. All application materials must be received by the SHRS Admissions office (4020 Forbes Tower, Pittsburgh, PA 15260) by the deadline. Applicants are encouraged to apply early due to the length of time required to secure a clinical position. Rolling admissions means the department will review and admit qualified applicants until a class is full.

All applicants considering the CScD must email CSD admissions before starting the application process.

Students with master's or doctoral degrees in speech-language pathology (with or without a completed clinical fellowship) may apply for advanced academic and clinical standing. All students must complete a minimum of 87 credits to satisfy didactic and clinical requirements for this degree. 8 credits of advanced standing toward CSD 2520 will be awarded to those entering the program with their Certificate of Clinical Competence (CCC). No more than one-third of the total number of required credits (87) may be granted to a student as transfer credit for work done at another institution. These credits must be appropriate substitute coursework taken beyond what was required for the MA/MS degree. Where a course and/or clinical/teaching experience is/are being considered as a substitute for a CScD requirement, the candidate must show evidence of having attained the CScD course objectives. The request will be considered by the CScD Plan of Study Committee. Approval by both members of the committee, as well as the course instructor of record (for CScD courses), are required for approval of the course substitute.

A successful applicant will be offered conditional admission contingent upon:
• Securing a one-half time clinical fellowship or post clinical fellowship position as a speech-language pathologist in a facility with which the academic department has a working relationship. The department will help locate possible positions, but it is the responsibility of the candidate to successfully secure the position following normal hiring practices at the specific facility.

• Engaging in unsupervised clinical practice in Pennsylvania. To engage in unsupervised clinical practice, you must obtain a Pennsylvania state license.

• Please be advised that maintenance of the clinical practice above and the State License are mandatory throughout your time in the program. Failure to maintain these requirements is grounds for dismissal from the program, as they are essential components of the academic program. All applicants are advised to ensure that they meet the certification and licensing requirements before applying to the program. Queries must be addressed by ASHA or the PA State Board - the University of Pittsburgh cannot address these queries.

University of Pittsburgh SHRS requires that applicants have the equivalent of a master's degree in Communication Science and Disorders from a regionally accredited institution in the US.

Doctor of Audiology (AuD) Degree

The primary objective of the AuD program is to provide students with the academic course work, clinical skills, and experience (beyond that obtained with the master's degree) needed to enter the professional community and assume independent leadership roles. Graduates will be prepared for independent clinical practice and academic positions upon graduation, and will be immediately eligible for professional licensure and for Certification from the American Speech-Language and Hearing Association and American Board of Audiology Certification.

The AuD is the required entry-level degree for audiologists. This AuD program prepares entry-level audiologists to assume independent clinical and leadership roles within the professional communities of the region, state, and nation.

The Doctor of Audiology degree education program in audiology at the University of Pittsburgh is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association, 2200 Research Boulevard #310, Rockville, MD 20850, 800-498-2071 or 301-296-5700.

Contact Information

CSD Administrator
Department of Communication Science and Disorders
School of Health and Rehabilitation Sciences
6035 Forbes Tower
412-383-6540
Fax: 412-383-6555
E-mail: csdadmissions@shrs.pitt.edu
www.shrs.pitt.edu/aud/

General Admission Requirements AuD Degree

• A baccalaureate degree from an accredited institution. Applicants who do NOT have a CSD major will need to satisfactorily complete the prerequisite coursework listed below.

• A minimum overall and prerequisite GPA of 3.0 is required. However, a GPA of 3.5 or higher is strongly recommended.

• A grade below C- in a CSD major or prerequisite course is not acceptable and must be repeated.

• Applicants who do not meet the minimum requirements for admission may be considered if strong evidence of their ability to complete a graduate program is provided.

• Ability to satisfactorily perform all of the technical standards required for this profession.

• Graduate Record Examination scores (GRE-general). The GRE must be within the past 5 years.

Prerequisite Coursework

Applicants should have a minimum of one 3-credit course in each of the following topic areas:

• Anatomy and Physiology of Speech and Hearing
ASHA Requirements

Please note that, in order to be eligible for clinical certification by the American Speech-Language-Hearing Association, you must meet the standards specified by the Association's Council for Clinical Certification. This includes satisfactory completion of at least one 3-credit course in each of the following areas prior to starting the graduate program: Biological Sciences (Human Biology, Anatomy & Physiology), Physical Sciences (Physics, Chemistry), Behavioral Sciences (Sociology, Psychology), Statistics (not research design).

Information for International Applicants

All international degrees will need a credential evaluation. We only accept a 4-year bachelor degree or those international degrees that are equivalent as determined by one of the following transcript evaluators: International Consultants of Delaware, Educational Credential Evaluators Inc., or Joseph Silny & Associates. **We do NOT accept evaluations by World Education Services (WES).** The program's foreign transcript policies do not apply to study abroad coursework that is itemized on a US college or university transcript (study abroad is processed in the same way as US coursework). International applicants who have earned an undergraduate or graduate degree in the United States do not need a transcript evaluation.

International applicants whose native language is not English must complete a test of English Language Proficiency within 12 months of the due date of the application. Applicants from Quebec Province are required to submit TOEFL or IELTS scores; all other Canadian applicants are exempt from the English language proficiency requirement.

Your application for admission will not be reviewed until your credential evaluation and TOEFL scores are received by CSDCAS.

Graduate students must have a 3.000 cumulative GPA to be eligible to graduate.

Graduate students who have completed at least 9 credits and whose cumulative GPA falls below a 3.000 will be placed on academic probation and will receive written notification of this status. At this point, it is the student's responsibility to meet with his or her adviser. In order to be removed from academic probation, the student will need to achieve a cumulative GPA of 3.000 within his or her next two terms of study. Failure to do so may subject the student to immediate dismissal from the program at the discretion of the Department Chair. Students who fail to demonstrate progress toward meeting graduation requirements in a timely manner may be placed on academic probation or be dismissed from the program at the discretion of the Department Chair.

Academic Standards

In addition to following the University-wide academic rules and regulations as detailed in the General Academic Regulations section of this bulletin, the AuD program is regulated by the SHRS Academic Standards, as well as the departmental Student Handbook on Academic and Clinical Requirements.

Doctor of Philosophy Degree in Communication Science and Disorders

Contact Information

CSD Administrator
Department of Communication Science and Disorders
School of Health and Rehabilitation Sciences
6035 Forbes Tower
412-383-6540
Fax: 412-383-6555
E-mail: csdadmissions@shrs.pitt.edu
www.shrs.pitt.edu/aud/
The PhD program in Communication Science and Disorders is oriented toward the basic scientific questions in the discipline, with an emphasis on basic and applied research.

The expectations of graduating PhD students are that they are able to conduct a program of independent, creative, scholarly research, and that they can plan and execute effective teaching at all levels of pedagogy.

**Admission Requirements**

Applicants will apply online using the SHRS Apply Yourself application. It is the responsibility of the applicant to complete all admission requirements prior to enrollment.

Applicants should submit their GRE scores to institution code 2927. For PhD applicants who have taken the GRE 5-10 years prior to their application, the Communication Science and Disorders PhD program will accept a copy of the official GRE scores that were sent to the applicant. After 10 years, all applicants will need to retake the examination.

For PhD applicants who completed a graduate program in the Communication Science and Disorders Department at the University of Pittsburgh, the only official transcript required at the time of application for the PhD program is the transcript that confirms completion of the first CSD graduate degree.

No one will be admitted to the CSD PhD program without a suitable adviser in their main area of specialization. Thus, anyone interested in PhD education is encouraged to contact individual faculty members whose research interests mesh most closely with theirs.

PhD applications are evaluated on a rolling basis. Applicants will be interviewed by faculty members as part of the admissions process. A final admission decision depends on the availability of a suitable research adviser and a vote of the CSD faculty.

Foreign transcript evaluation must be completed by International Consultants of Delaware, Educational Credential Evaluators Inc., or Joseph Silney & Associates. **We do NOT accept transcript evaluations by World Education Services (WES).** The program's foreign transcript policies do not apply to study abroad coursework that is itemized on a US college or university transcript (study abroad is processed in the same way as US coursework).

International applicants must also submit official TOEFL scores. Your application for admission will not be reviewed until your credential evaluation and TOEFL scores are received by CSDCAS.

**Financial Aid**

Acceptance into the PhD program does not guarantee financial aid, but each admitted student is automatically put into a merit-based competition for available teaching assistantships, doctoral traineeships, and positions on research grants. Financial assistance is often available from a variety of sources, including teaching assistantships, PhD traineeships, targeted Clinical Fellowship Years, and graduate research assistantships. Such appointments typically require 20 hours each week of teaching, research, and/or clinical service in exchange for a monthly stipend. A scholarship based on merit covers at least partial tuition remission, fees, and health insurance. The Department's Financial Aid Committee works with each admitted student's adviser to secure a funding opportunity that is rewarding both academically and financially. Prospective applicants who are interested in financial support should indicate this on their application for admission.

**Communication Science and Disorders, PhD**

**Program Requirements**

A minimum of 72 credits beyond the bachelor's degree level is needed for the PhD degree in communication science and disorders at the University of Pittsburgh. For further detail on allowable credits, see Credit Requirements under Regulations Pertaining to Doctoral Study.

All CSD PhD students are required to take the PhD Research Seminar (CSD 3048) and a minimum of three additional departmental PhD seminars: one in speech/language/voice/swallowing, one in hearing, and one in the student's major area of study.
CSD PhD students also take a minimum of 12 credits of coursework in statistics and experimental design, and 6 credits of PhD research practicum. Until they begin their comprehensive examinations, PhD students are required to attend the departmental Proseminar (CSD 3060), to participate in poster sessions, attend invited colloquium talks, and present "think aloud" talks about their own research, at whatever stage it is in its development. After they begin the comprehensive examination, students are welcome but not required to participate in these experiences. Students also have the opportunity to take courses in teaching and grant preparation, and to complete teaching practica.

Four formal degree requirements must be satisfied before a student initiates PhD dissertation work:

1. No later than the second term of study, students, with the help of their major advisers, develop a proposed Plan of Study that specifies their background, goals, and tentative plans for their program of study. Students schedule a Plan of study meeting with a faculty committee, to review this document and their plans (see Major Adviser and Advising Committees, below).

2. Annually after the initial plan of study meeting, the student compiles an academic portfolio, until the time at which the student takes the comprehensive examination. The portfolio consists of at least three new pieces of scholarly work that are provided to the student's Plan of Study Committee prior to an annual review meeting. The student's Plan of Study will also be reviewed at these annual meetings.

3. The student must complete a pre-dissertation research project, culminating in a publishable data-based manuscript resulting from a research practicum experience. This project must be completed prior to initiating the comprehensive examination.

4. The student must pass a comprehensive examination consisting of two substantive written projects and an open-ended oral examination. Students on provisional or special status, or on probation, are not eligible to take the comprehensive exam. After the prospectus is passed, students file an application for admission to candidacy for the Doctor of Philosophy degree. For details see below and also Admission to Candidacy for the Doctor of Philosophy Degree in this bulletin for details.

Major Adviser and Advising Committees

Students admitted to the PhD program are assigned a major adviser in their main area of specialization. The adviser is primarily responsible for providing assistance and advice to the student throughout all facets of the PhD program, and typically serves as the chair of the Plan of Study, Comprehensive Examination, and Dissertation Committees. Either PhD students or their advisers may initiate a change of adviser, but no student may remain in the program without an adviser.

The student, upon consultation with the major adviser, secures the agreement of at least two other departmental faculty members with graduate faculty status to serve with the adviser on the student's Plan of Study Committee. This committee initially convenes to review and make recommendations about the student's Plan of Study. Thereafter, the committee meets annually with the student to review and make recommendations about the student's portfolio and general progress in the PhD program. This committee, with or without changes in faculty membership, also administers and evaluates the student's comprehensive examination.

See Doctoral Committee under Regulations Pertaining to Doctoral Degrees for an overview of the dissertation committee's makeup and responsibilities.

Overview or Prospectus Meeting

See Overview or Prospectus Meeting under Regulations Pertaining to Doctoral Study for the regulations pertaining to this meeting and then read the following information that is specific to the PhD program in Communication Science and Disorders. After securing the adviser's approval, each PhD student must submit a written dissertation proposal to the Dissertation Committee at least two weeks prior to a formal overview meeting with that committee. (See Dissertation and Abstract section for details on the characteristics of an appropriate dissertation.)

Final Oral Examination

See Final Oral Examination under Regulations Pertaining to Doctoral Study and then note the following additional program-specific information. After securing the adviser's approval, the student submits copies of the complete document to the dissertation committee at least two weeks prior to the final oral examination in defense of the dissertation.

PhD Curriculum
For the CSD PhD degree, a minimum of 72 credits beyond the bachelor's degree is needed.

Required coursework includes: the departmental PhD Research Seminar (CSD 3048); a minimum of 3 additional PhD seminars (one in speech and language, one in hearing, and one in the student's major area of study (speech/language/voice/swallowing); a minimum of 12 credits in research design and statistics; and attendance each fall and spring term at the weekly departmental Proseminar (CSD 3060). The proseminar includes student and faculty poster sessions, a colloquium series, and a student-centered research roundtable that allows participation and problem-solving by students at various stages of their research training.

Otherwise, coursework and other experiences are individually tailored for each student, in consultation with the student's adviser and the adviser-chaired Plan of Study committee.

**Doctor of Audiology, AuD**

**Degree Requirements**

Students with bachelor's degrees in communication science and disorders can complete the program in four years, while students with a master's degree in CSD can complete the program in approximately two years. Students applying to the AuD program with a completed master's degree will be required to complete two years of study with a minimum of 30 credits (typically about 38 credits) to satisfy academic and clinical requirements for the degree. A review of successfully completed graduate coursework in the master's degree in CSD (focus in Audiology) will be conducted after being admitted to the AuD Program. Students applying to the AuD program with a completed bachelor's degree (major in CSD) will require four years of study with a minimum of 75 credits (typically about 100 credits) to satisfy academic and clinical requirements for the degree. Students with a bachelor's degree without a CSD major will have to complete an additional year of post-baccalaureate study. Other requirements include the successful completion of two comprehensive examinations, a mentored research project, and a full-time clinical externship.

**Comprehensive Examinations**

Students in the AuD program are required to successfully complete two comprehensive examinations before the Doctor of Audiology degree can be awarded. The Comprehensive Exam I is a formative examination that will identify strengths and/or weaknesses in the student's knowledge base. An ad hoc committee of reviewers administers this comprehensive examination.

In addition, students pursuing the AuD are required to successfully complete Comprehensive Exam II. During this examination, the student will demonstrate an ability to apply theoretical knowledge to a real clinical case with which the student has been extensively involved during clinical training. Comprehensive Exam II will have both written and oral portions. The student will identify a case from the student's own clinical experience in which they have been primarily responsible for case management. This case will be thoroughly presented in conjunction with in-depth background information, including relevant clinical research on all aspects of the case. A panel of three reviewers will be constituted to evaluate each individual student's examination performance.

All audiology students in good academic standing are expected to pass their comprehensive examination(s). However, regardless of academic standing, failure to pass either of the above examinations within three examination cycles will result in the student's dismissal from the audiology program.

**AuD Curriculum**

- CSD 2021 - CLINICAL PROCEDURES LAB 1-1
- CSD 2022 - CLINICAL PROCEDURES LAB 2-2
- CSD 2040 - AUDIOLOGICAL ASSESSMENT
- CSD 2041 - MANAGEMENT OF ADULT HEARING LOSS
- CSD 2042 - AUDIOLOGICAL ASSESSMENT LAB
- CSD 2044 - DIFFERENTIAL DIAGNOSIS
- CSD 2045 - PHYSIOLOGICAL ASSESSMENT
- CSD 2046 - PEDIATRIC EVALUATION
- CSD 2047 -AMPLIFICATION I
Medical Speech-Language Pathology, CScD

Degree Requirements and Curriculum

All students enrolled in the Post Masters CScD program are required to complete 87 credits. Eight credits of advanced standing toward CSD 2520 will be awarded to those entering the program with their Certificate of Clinical Competence (CCC). Courses are chosen with the advisor and a Plan of Study will be developed to design an in-depth program of study taking into account the student's previous academic preparation and experience.

Please note that you will have required classes each Summer term in the program. Most of our courses are only offered once per academic year. If a student fails to successfully complete a course, the student must retake the course the next academic year. Furthermore, this may also prevent the student from registering for the advanced-level courses and delay the date of graduation.
Comprehensive Examinations

Students in the CScD program are required to successfully complete oral and written comprehensive examinations. These are cumulative examinations covering the core clinical sciences and theoretical basis supporting diagnosis and intervention. Students are required to be engaged in clinical practice throughout their program. Students are also required to demonstrate clinical decision-making and clinical practice knowledge and skills using principles of evidence-based practice.

Academic Standards

In addition to following University-wide academic rules and regulations as detailed in the General Academic Regulations section of this bulletin, the CScD program is regulated by the SHRS Academic Standards, as well as the departmental Student Handbook on Academic and Clinical Requirements.

Communication Science and Disorders - Audiology Concentration, MA/MS

Communication Science and Disorders Program Requirements

Proseminar Requirement

All students must complete the proseminar requirement, which consists of attending a specified number of scientific and professional presentations that have relevance to communication science and disorders.

Clinical Practicum

Clinical practicum requirements are met in Communication Science Disorders Clinical Network which consists of more than 100 facilities in Western Pennsylvania with which the program is affiliated. These include varied settings such as hospitals, rehabilitation centers, home based services, specialty clinics, not-for-profit clinics, early intervention, private practices, and schools. All academic course work must be completed with a minimum grade of C to satisfy requirements for the degree.

Comprehensive Exam for MA

All students in the Master of Arts program are required to pass an oral comprehensive examination in the spring of their second year. The comprehensive examination assesses students' ability to think critically, to communicate their thoughts in oral form, and to demonstrate their grasp of the major academic and clinical content provided in their graduate program.

Students seeking the Doctor of Audiology (AuD) degree must complete a second comprehensive examination which includes a written and oral component. Details about that comprehensive examination can be found in the section on the AuD degree.

Thesis Option for Master of Science (MS) degrees

Students pursuing the Master of Science degree in audiology must successfully complete a thesis project. Thesis students will have an examining committee of at least three University of Pittsburgh faculty members (including the research director, who serves as chair).

Additional requirements are outlined in the academic handbook, which is distributed to students at the beginning of their academic programs.
Concentration

This program is designed for those students who do not plan to provide clinical services, but would like to pursue a research track in audiology. Students pursuing the AuD degree (Clinical Doctorate) also may pursue a research track. The audiology concentration for the master's degree requires a minimum of 30 credits of coursework. All credits must be passed with a B grade or better in order to count towards graduation.

Audiology Curriculum

- CSD 2021 - CLINICAL PROCEDURES LAB 1-1
- CSD 2022 - CLINICAL PROCEDURES LAB 2-2
- CSD 2040 - AUDIOLOGICAL ASSESSMENT
- CSD 2041 - MANAGEMENT OF ADULT HEARING LOSS
- CSD 2042 - AUDIOLOGICAL ASSESSMENT LAB
- CSD 2044 - DIFFERENTIAL DIAGNOSIS
- CSD 2045 - PHYSIOLOGICAL ASSESSMENT
- CSD 2046 - PEDIATRIC EVALUATION
- CSD 2047 - AMPLIFICATION 1
- CSD 2049 - AGING AUDITORY SYSTEMS
- CSD 2051 - CLINICAL PROCEDURES LAB 1-2
- CSD 2052 - CLINICAL PROCEDURES LAB 2-3
- CSD 2053 - CLINICAL PROCEDURES LAB 2-1
- CSD 2055 - PEDIATRIC AUDIOLOGIC REHABILITATION
- CSD 2056 - AUDIOLOGY PRACTICUM NETWORK - AUD
- CSD 2057 - AUDIOLOGY PRACTICUM OUTPLACEMENT
- CSD 2060 - PROSEMINAR - MA
- CSD 2068 - SPEECH PRACTICUM NETWORK - AUD
- CSD 2078 - PHYSICS, PHYSIOLOGY AND PSYCHOLOGY OF SOUND
- CSD 2451 - AUDIOLOGY MASTERS COMPREHENSIVE

Communication Science and Disorders - Speech-Language Pathology Concentration, MA/MS

Communication Science and Disorders Program Requirements

Proseminar Requirement

All students must complete the proseminar requirement, which consists of attending a specified number of scientific and professional presentations that have relevance to communication science and disorders.

Clinical Practicum

Clinical practicum requirements are met in Communication Science Disorders Clinical Network which consists of more than 100 facilities in Western Pennsylvania with which the program is affiliated. These include varied settings such as hospitals, rehabilitation centers, home based services, specialty clinics, not-for-profit clinics, early intervention, private practices, and schools. All academic course work must be completed with a minimum grade of C to satisfy requirements for the degree.
Comprehensive Examination

Comprehensive Examination for the Master of Arts (MA) degree

All students in the Master of Arts program are required to pass a comprehensive examination. The comprehensive examination assesses students' ability to think critically, to communicate their thoughts in written and oral form, and to demonstrate their grasp of the major academic and clinical content provided in their graduate program.

Students pursuing the Master of Arts (MA) degree in communication disorders with a concentration in speech-language pathology must satisfactorily complete a one-credit course, typically taken in the fall or spring term of their last year in the graduate program. The course includes a final oral examination which consists of a brief presentation by the student followed by an extended question and answer session by selected members of the faculty. Requirements for passing the comprehensive examination course are provided in the course syllabus.

Thesis Option for Master of Science (MS) degree

Students pursuing the Master of Science degree in speech-language pathology must successfully complete a thesis project. Students who complete a Master's thesis are exempt from the comprehensive examination. Thesis students will have an examining committee of at least three University of Pittsburgh faculty members, including the research director, who serves as chair.

Additional requirements are outlined in the academic handbook, which is distributed to students at the beginning of their academic programs.

Concentration

The master's degree program with a concentration in speech-language pathology has a generally predefined curriculum with some options for electives. Students have the option to take either an adult or pediatric hearing management course. Students participate in at least 10 credits of practicum and have the option to complete a School Practicum making them eligible for State of Pennsylvania Educational Certification in Speech-Language Impaired.

Program Requirements

The program is designed to be completed within 6 terms, with the majority of students completing the requirements in 5 terms. Course work must be passed with a C grade or better in order to count for graduation and to qualify the student for the comprehensive examination.

General Clinical Track

This track requires 60 credits distributed as follows: Required Coursework (50 credits) and Clinic Practicum (10 credits).

Public School Option

For school certification, students must complete the regular master's degree requirements plus the following: a 3 credit child/human development course (typically taken as an undergraduate); a Language Development course (typically taken through the CSD undergraduate program); a one credit School-based Services course; and CSD 2067 School Practicum (4 days per week for a full semester). Additionally, the student must pass specific Praxis examinations as required by the Pennsylvania Department of Education (PDE).

The progression of courses for the general clinical requirements and the public school option are outlined on the Department's web site. Includes the following Program Curriculum.

Curriculum

• CSD 2020 - AUDIOLOGICAL ASSMNT SLP STUDENTS
• CSD 2042 - AUDIOLOGICAL ASSESSMENT LAB
• CSD 2039 - MOTOR SPEECH DISORDERS

• CSD 2041 - MANAGEMENT OF ADULT HEARING LOSS or
• CSD 2055 - PEDIATRIC AUDIOLOGIC REHABILITATION

• CSD 2060 - PROSEMINAR - MA
• CSD 2062 - INTRODUCTION TO CLINICIAN-CLIENT COMMUNICATIONS
• CSD 2063 - DEVELOPING CLINICIAN-CLIENT COMMUNICATIONS
• CSD 2064 - INTRO CLINICAL DECISION-MAKING
• CSD 2070 - ARTICULATION AND PHONOLOGICAL DISORDERS
• CSD 2071 - CHILD LANGUAGE DISORDERS
• CSD 2072 - FLUENCY DISORDERS
• CSD 2073 - VOICE DISORDERS
• CSD 2074 - CLEFT PALATE
• CSD 2076 - DYSPHAGIA
• CSD 2077 - AUGMENTATIVE COMMUNICATION
• CSD 2081 - RESEARCH STRATEGIES AND TACTICS
• CSD 2082 - PROFESSIONAL ISSUES
• CSD 2250 - CHILD LANGUAGE DISORDERS 2
• CSD 2130 - NEUROGENIC LANGUAGE AND COGNITIVE COMMUNICATION DISORDERS 1
• CSD 2230 - NEUROGENIC LANGUAGE AND COGNITIVE COMMUNICATION DISORDERS 2

Optional

• CSD 2500 - MEDICAL SPEECH-LANGUAGE PATHOLOGY 3
• CSD 2514 - SCHOOL BASED SERVICE DELIVERY

Clinical Practice

(variable, minimum of 10 credits)

• CSD 2059 - AUDIOLOGY PRACTICUM NETWORK - SLP
• CSD 2065 - SPEECH PRACTICUM NETWORK
• CSD 2066 - SPEECH PRACTICUM OUTPLACEMENT
• CSD 2067 - CLINIC PRACTICE IN SCHOOLS

Other Requirements:

• CSD 2069 - SLP MASTERS COMPREHENSIVE

Thesis Option

• CSD 2000 - RESEARCH & THESIS MASTER'S DEGR

Department of Health Information Management
Master of Science Degree in Health and Rehabilitation Science with a Concentration in Health Information Systems or Health Care Supervision and Management

The Department of Health Information Management (HIM) offers two concentrations leading to the Master of Science degree in Health and Rehabilitation Science, Health Information Systems (HIS) which also offers an RHIA option and Health Care Supervision and Management (HSM).

Contact Information:

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http://www.shrs.pitt.edu/HIM/

Prerequisites and Admission Requirements

Health Information Systems (HIS)

HIS Prerequisites
Healthcare professionals from various disciplines are encouraged to apply to this program. Applicants with other relevant training and career experience who wish to develop competencies in health information system applications also will be given admission consideration.

Admission Requirements

- A baccalaureate degree from an accredited institution and completion of the following prerequisite courses:
  - Computer Programming, 3 credits
  - Statistics, 3-4 credits
- A minimum grade point average (GPA) of 3.0 (on a 4.0 scale) is required. Admission may be considered for applicants with a GPA of less than 3.0 if other supporting evidence of their ability to complete the graduate program is provided.

Health Care Supervision and Management (HSM)

HSM Prerequisites
Healthcare professionals from various disciplines are encouraged to apply to this program. Applicants with other relevant training and career experience who wish to develop competencies in health care supervision and management also will be given admissions consideration.

Admission Requirements

- A baccalaureate degree from an accredited institution.
- A minimum grade point average (GPA) of 3.0 (on a 4.0 scale) is required. Admission may be considered for applicants with a GPA of less than 3.0 if other supporting evidence of their ability to complete the graduate program is provided.

Application Process for HIS & HSM
Complete the SHRS ApplyYourself online application.

Application fee of $50 - You may pay the application fee online or elect to pay by check or money order. Make check or money order payable to the University of Pittsburgh. You will be prompted to choose your payment type at the end of the ApplyYourself application process.

Three Letters of Recommendation are required. These recommendations should be from college level instructors or employers/professionals who have supervised your work in a paid or volunteer capacity. These individuals should be able to comment on your academic, professional and interpersonal abilities. People submitting recommendation letters on your behalf are encouraged to send their letters to our admissions office electronically through our application system. For those people who wish to submit their letter of recommendation on paper, please forward them a copy of our Recommendation Form and follow the directions for paper recommendations.

Statement of Purpose/Essay

Transcript(s) - Submit official transcript(s) from each college or university you have attended even if only one course was taken at that particular college or university. Course(s) posted for advanced standing on transcripts are not considered official. Please mail to the SHRS Office of Admissions, 4020 Forbes Tower, University of Pittsburgh, Pittsburgh, PA 15260.

Applications accepted on a rolling basis.

Applications can be submitted when course requirements are in progress.

Financial Aid

There are scholarships and loan opportunities available to graduate students from the American Health Information Management Association (AHIMA). Further information can be obtained from the AHIMA web site at www.ahima.org under the career and student center tab. Additionally, the Pennsylvania Health Information Management Association (PHIMA) awards scholarships to qualified students in Pennsylvania. Further information can be obtained from PHIMA's web site at http://www.phima.org/members/scholarships/.

The Healthcare Information and Management Systems Society (HIMSS) also awards scholarships to HIMSS student members who have achieved academic excellence and have the potential to be future leaders in the health care information and management systems industry. Visit the HIMSS site at http://www.himss.org/ and navigate to "Scholarships" under the Professional Development menu.

Health Information Management - Health Care Supervision and Management Concentration, MS

Health Care Supervision and Management (HSM), a concentration in the Master of Science in Health and Rehabilitation Sciences program, is housed in the Department of Health Information Management, School of Health and Rehabilitation Sciences (SHRS). Pitt and SHRS are currently ranked the #1 college in the US to student health professions according to College Factual as listed in a recent article in USA Today.

The Health Care Supervision and Management (HSM) concentration provides health professionals an opportunity for career advancement. Qualified students with interests in administration and supervisory management in health care, long-term care, and rehabilitation may pursue a 41-42 credit concentration in Health Care Supervision and Management. Students enrolled full-time normally complete program in 5 consecutive semesters.

This program is designed for professionals in health care who wish to attain knowledge and skills at the graduate level to prepare for a supervisory management position or to upgrade competencies developed earlier in his/her career.

Students with a special interest in long-term care for the aging or disability studies may pursue additional courses offered within SHRS and/or the Graduate School of Public Health (GSPH).

Program Requirements
All students enrolled in the Health Care Supervision and Management concentration are required to complete 41-42 credits. Courses are chosen with the advisor and a Plan of Study will be developed to enable each student to design an in-depth study of Health Care Supervision and Management taking into account student's previous academic preparation and experience.

Most of our courses are only offered once per academic year. Please also note that you will have a required class that is offered during Summer. If a student fails to successfully complete a course, the student must retake the course the next academic year. Furthermore, this may also prevent the student from registering for the advanced-level courses and delay the date of graduation.

**HSM Curriculum and Course Descriptions**

The Health Care Supervision and Management curriculum allows students to choose from required core courses and elective courses. Elective courses can be chosen from SHRS or other academic programs within the University.

**Foundation & Core Courses (17 credits)**
- HRS 2434 - BUSINESS ISSUES AND DATA ANALYTICS IN HEALTH CARE *
- HRS 2435 - FINANCIAL MANAGEMENT FOUNDATIONS FOR HEALTH CARE AND PUBLIC HEALTH *
- HRS 2445 - HUMAN RESOURCE MGT/LABOR RELTN *
- HRS 2465 - LEADERSHIP SKILL DEVELOPMENT *
- HRS 2421 - SECURITY PRIVACY AND LEGAL ISSUES *
- HRS 2920 - ADMINISTRATIVE INTERNSHIP *

**Health Informatics Courses (select 6 credits)**
- HRS 2420 - INTRO HEALTH INFORMATION SYSTEMS
- HRS 2490 - ELECTRONIC HEALTH RECORDS *
- HRS 2423 - CLOUD COMPUTING, HL7 AND ANALYTICS IN HEALTH CARE
- HRS 2424 - DATA BASE MANAGEMENT HLTH CARE
- HRS 2432 - TELEMEDICINE, TELEREHABILITATION, AND E-HEALTH

* Required Course for All Students

**Electives (select 12-13 credits - selected with advisor from SHRS and other departments within the University)**
- HRS 2431 - EVALUATION METHODS IN HEALTH INFORMATICS
- HRS 2454 - LEAN SIX SIGMA AND OTHER IMPROVEMENT METHODOLOGIES IN HEALTH CARE
- HRS 2901 - INTRO TO RESEARCH METHODOLOGY
- HRS 2903 - ISSUES IN THE HEALTH SYSTEM
  OR
- HRS 2902 - TOPICS IN HEALTH CARE
- HRS 2910 - STATSTCL APPLCS/HEALTH & REHAB
  OR (BIOST 2011, 2041, 2042, PSYED 2018)
- HRS 2905 - ETHICAL ISSUES IN HEALTH CARE
- HRS 2428 - CONCP SOFTWR PROJ ENGR HLTH CARE
- HRS 2482 - LEGAL ASPECTS OF HEALTH CARE
- HRS 2480 - DIMENSIONS OF AGING: CULT & HLTH
- HRS 2708 - INDIVIDUAL, SOCIAL, AND CULTURAL EXPERIENCE OF DISABILITY
- LAW 5339 - LAW OF DISABILITY DISCRIMINATION
- HRS 2425 - DATA ANALYTICS: APPLICATION IN GENOMICS AND PERSONALIZED CARE
- HRS 2426 - EVALUATION OF CLASSIFICATION SYSTEMS, REFERENCE TERMINOLOGIES & DATA CAPTURE TECHNOLOGIES IN HC
Students are required to take six credits in an area in which they want to further develop their professional skills, selected from the following list of electives or from other offerings within the School and University.

Please note: All students are required to take at least 30 credits within SHRS

** A comprehensive examination is required and should be scheduled by the advisor and student **

Internships for Graduate Students

Graduate students in the Department of Health Information Management in the areas of Health Information Systems and Health Care Supervision & Management are required to complete an internship as part of their curriculum. The overall goal of the internship is to provide students with practical experiences to apply their knowledge and skills that they learn in their respective graduate programs.

The HIM department has affiliation agreements with approximately 200+ clinical sites for student internships. The following list provides a sample of these sites:

- Center for Connected Medicine
- Children's Hospital of Pittsburgh - IS Department
- Children's Institute of Pittsburgh
- Excela Health
- Highmark
- M*Modal
- McKesson
- Oman HIM Institute
- United Cerebral Palsy of Pittsburgh
- University of Pennsylvania Health System
- UPMC CTSI (Clinical and Translational Science Institute)
- UPMC Department of Radiology
- UPMC eRecord
- UPMC Health Track
- UPMC Interface Development
- UPMC Physician Services Division
- UPMC Radiology Division
- UPMC Technology Development Center

Prerequisites for Graduate Internships

The following are required in order for students to be eligible to participate in an internship. The student's advisor will provide detailed information and time guidelines for completion of the requirements once the student matriculates into the graduate program.

- Physical examination including proof or completion of specific immunizations
- TB test, 2-step
- Pennsylvania Criminal Record Check
- Pennsylvania Child Abuse Clearance
- FBI Background Check (includes fingerprinting)
- HIPAA Training and Certification
- Students must carry personal health insurance while participating in an internship
- Students must carry professional student liability insurance coverage while participating in an internship. This coverage is provided by the SHRS group insurance plan and will appear as a charge on the students' tuition bill.
- Some sites may have additional requirements (i.e. drug screen, influenza vaccine, or orientation programs specific to their organization).
- Internship sites may not allow a student to participate in an internship at their site if the background check reports that they have been convicted of a misdemeanor; a felony; or a felonious or illegal act associated with alcohol and/or substance abuse.

Additional Information:

- Travel to internship sites is the responsibility of the student. Students are expected to have a car or to provide their own transportation to all remote sites; no exceptions will be made. Not all sites are accessible by public transportation.
- All expenses for transportation, parking, meals, and costs of prerequisites associated with clinical education are the responsibility of the student.
- Approximate cost for clearances is $100, and costs for physical exam and immunization status are dependent on health insurance coverage and provider costs.
- Approximate cost for drug screen is $40.
- The internship is 3 credits, and requires a minimum of 180 hours of student participation.

For more information on internships students are encouraged to contact their academic advisor.

Health Information Management - Health Information Systems Concentration, MS

The Health Information Systems (HIS) concentration leading to a Master of Science degree in Health and Rehabilitation Sciences prepares professionals responsible for the development and management of health information systems consistent with the clinical, fiscal, administrative, ethical, and legal requirements of healthcare institutions. Graduates of this program analyze, design, implement, and evaluate health information systems. As members of the healthcare team, they interact with other healthcare professionals and administrators, and provide healthcare data for patient care, research, quality improvement, strategic planning, reimbursement, and related managerial functions.

HIS graduates work in a variety of settings, such as hospitals, health planning agencies, computer companies, consulting firms, information systems vendors, ambulatory care centers, research centers, rehabilitation facilities, and insurance companies.

Why choose HIS at PITT!:

- PITT and SHRS are currently ranked a top ten college in the US to study health professions according to College Factual as listed in a recent article in USA Today.
- Our Health Information Systems Masters program is ranked among the best in the nation for its quality and affordability by MBA Healthcare Management.

The HIS Concentration Registered Health Information Administrator (RHIA) Option

We offer specialized courses within the HIS concentration for students who are seeking eligibility to sit for the American Health Information Management (AHIMA) credentialing examination to become a Registered Health Information Administrator (RHIA).

The Health Information Systems concentration leading to a Master of Science degree in Health and Rehabilitation Sciences is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

Results from the 2015 outcomes assessment reported to CAHIIM in the 2016 Annual Program Report (APAR) indicate:

- A 100% employer satisfaction rate
A 100% graduate satisfaction rate

A 93% pass rate National Certification Exam

Program Requirements - HIS

All students enrolled in the Health Information Systems concentration are required to complete 41-42 credits (students enrolled full-time normally complete program in five consecutive semesters). Courses are chosen with the advisor and a Plan of Study will be developed to enable each student to design an in-depth study of Health Informatics taking into account student's previous academic preparation and experience.

Most of our courses are only offered once per academic year. Please also note that you will have required classes offered during the Summer. If a student fails to successfully complete a course, the student must retake the course the next academic year. Furthermore, this may also prevent the student from registering for the advanced-level courses and delay the date of graduation.

Health Informatics & Foundation Courses (select 29-30 credits)

- HRS 2420 - INTRO HEALTH INFORMATION SYSTEMS *
- HRS 2421 - SECURITY PRIVACY AND LEGAL ISSUES *
- HRS 2422 - COMPUTER PROGRAMMING FOR HEALTH INFORMATICS *
- HRS 2423 - CLOUD COMPUTING, HL7 AND ANALYTICS IN HEALTH CARE
- HRS 2424 - DATA BASE MANAGEMENT HLTH CARE *
- HRS 2425 - DATA ANALYTICS: APPLICATION IN GENOMICS AND PERSONALIZED CARE
- HRS 2426 - EVALUATION OF CLASSIFICATION SYSTEMS, REFERENCE TERMINOLOGIES & DATA CAPTURE TECHNOLOGIES IN HC
- HRS 2428 - CONCP SOFTWR PROJ ENGR HLTH CARE *
- HRS 2431 - EVALUATION METHODS IN HEALTH INFORMATICS
- HRS 2432 - TELEMEDICINE, TELEREHABILITATION, AND E-HEALTH
- HRS 2434 - BUSINESS ISSUES AND DATA ANALYTICS IN HEALTH CARE
- HRS 2439 - HEALTH INFOR SYSTEMS INTERNSHIP *
- HRS 2490 - ELECTRONIC HEALTH RECORDS *
- HRS 2901 - INTRO TO RESEARCH METHODOLOGY
- HRS 2910 - STATSTCL APPLCS/HEALTH & REHAB
  OR (BIOST 2011, 2041, 2042; PSYED 2018)
- INFSCI 2150 - INFORMATION SECURITY AND PRIVACY ^
- INFSCI 2731 - SECURITY IN E-COMMERCE ^
- INFSCI 2621 - SECURITY MANAGEMENT AND COMPUTER FORENSICS
- INFSCI 2620 - DEVELOPING SECURE SYSTEMS

Health Management Courses (select 6 credits)

- HRS 2435 - FINANCIAL MANAGEMENT FOUNDATIONS FOR HEALTH CARE AND PUBLIC HEALTH
- HRS 2445 - HUMAN RESOURCE MGT/LABOR RELTN
- HRS 2465 - LEADERSHIP SKILL DEVELOPMENT
- HRS 2454 - LEAN SIX SIGMA AND OTHER IMPROVEMENT METHODOLOGIES IN HEALTH CARE
- HRS 2903 - ISSUES IN THE HEALTH SYSTEM
  OR
- HRS 2902 - TOPICS IN HEALTH CARE
- HRS 2905 - ETHICAL ISSUES IN HEALTH CARE

* Required Course for All HIS Students

^ Additionally required courses for students interested in enhanced Security & Privacy content.
Thesis Option (6 credits)
- HRS 2924 - GRADUATE RESEARCH PROPOSAL
- HRS 2925 - GRADUATE RESEARCH

Non-Thesis Option (select 6 credits)
Electives to be taken from above or at other schools within the University.

Please note: All students are required to take at least 30 credits within SHRS

**A comprehensive Examination is required and should be scheduled by the advisor and student.**

Program Requirements - HIS, RHIA Option

All students enrolled in the Health Information Systems/RHIA Option concentration are required to complete 41-42 credits (students enrolled full-time normally complete program in five consecutive semesters). Courses are chosen with the advisor and a Plan of Study will be developed to enable each student to design an in-depth study of Health Informatics taking into account student's previous academic preparation and experience.

Most of our courses are only offered once per academic year. Please also note that you will have required classes offered during the Summer. If a student fails to successfully complete a course, the student must retake the course the next academic year. Furthermore, this may also prevent the student from registering for the advanced-level courses and delay the date of graduation.

Health Informatics & Foundation Courses (23-24 credits)
- HRS 2421 - SECURITY PRIVACY AND LEGAL ISSUES *
- HRS 2422 - COMPUTER PROGRAMMING FOR HEALTH INFORMATICS *
- HRS 2424 - DATA BASE MANAGEMENT HLTH CARE *
- HRS 2428 - CONCP SOFTWR PROJ ENGR HLTH CARE *
- HRS 2439 - HEALTH INFOR SYSTEMS INTERNSHIP *
- HRS 2490 - ELECTRONIC HEALTH RECORDS *
- HRS 2903 - ISSUES IN THE HEALTH SYSTEM *
  OR
  - HRS 2902 - TOPICS IN HEALTH CARE *
  - HRS 2910 - STATSTCL APPLCS/HEALTH & REHAB *
  OR (BIOST 2011, 2041, 2042; PSYED 2018)

Health Management Courses (6 credits)
- HRS 2435 - FINANCIAL MANAGEMENT FOUNDATIONS FOR HEALTH CARE AND PUBLIC HEALTH *
- HRS 2445 - HUMAN RESOURCE MGT/LABOR RELTN *
- HRS 2465 - LEADERSHIP SKILL DEVELOPMENT
- HRS 2454 - LEAN SIX SIGMA AND OTHER IMPROVEMENT METHODOLOGIES IN HEALTH CARE
- HRS 2905 - ETHICAL ISSUES IN HEALTH CARE

RHIA Option (11 credits)
- HIM 1405 - MEDICAL TERMINOLOGY LAB *^^
- HRS 1020 - ANATOMY AND PHYSIOLOGY *^^
- HRS 2416 - INTRO HEALTH INF & HEALTH CARE *
- HRS 2433 - CLASSIFICATION SYSTEMS IN HEALTH CARE *
- HRS 2457 - QUALITY MANAGEMENT *
- HRS 2456 - REIMBURSEMENT SEMINAR *
- HRS 2482 - LEGAL ASPECTS OF HEALTH CARE *
Electives/Additional Coursework

- HRS 2420 - INTRO HEALTH INFORMATION SYSTEMS
- HRS 2423 - CLOUD COMPUTING, HL7 AND ANALYTICS IN HEALTH CARE
- HRS 2425 - DATA ANALYTICS: APPLICATION IN GENOMICS AND PERSONALIZED CARE
- HRS 2426 - EVALUATION OF CLASSIFICATION SYSTEMS, REFERENCE TERMINOLOGIES & DATA CAPTURE TECHNOLOGIES IN HC
- HRS 2431 - EVALUATION METHODS IN HEALTH INFORMATICS
- HRS 2432 - TELEMEDICINE, TELEREHABILITATION, AND E-HEALTH
- HRS 2434 - BUSINESS ISSUES AND DATA ANALYTICS IN HEALTH CARE
- HRS 2901 - INTRO TO RESEARCH METHODOLOGY

IMPLEMENTATION DATE: 9/1/2016

* Required Courses for RHIA Option Students

^Undergraduate courses do not count towards the 41 required graduate credits. These courses can be taken prior to admission or while enrolled in the program.

Please Note: All students are required to take at least 30 credits within SHRS.

**A comprehensive Examination is required and should be scheduled by the advisor and student.**

Internships for Graduate Students

Graduate students in the Department of Health Information Management in the areas of Health Information Systems and Health Care Supervision & Management are required to complete an internship as part of their curriculum. The overall goal of the internship is to provide students with practical experiences to apply their knowledge and skills that they learn in their respective graduate programs.

The HIM department has affiliation agreements with approximately 200+ clinical sites for student internships. The following list provides a sample of these sites:

- Center for Connected Medicine
- Children's Hospital of Pittsburgh - IS Department
- Children's Institute of Pittsburgh
- Excela Health
- Highmark
- M*Modal
- McKesson
- Oman HIM Institute
- United Cerebral Palsy of Pittsburgh
- University of Pennsylvania Health System
- UPMC CTSI (Clinical and Translational Science Institute)
- UPMC Department of Radiology
- UPMC eRecord
- UPMC Health Track
- UPMC Interface Development
- UPMC Physician Services Division
- UPMC Radiology Division
- UPMC Technology Development Center

Prerequisites for Graduate Internships

The following are required in order for students to be eligible to participate in an internship. The student's advisor will provide detailed information and time guidelines for completion of the requirements once the student matriculates into the graduate program.
- Physical examination including proof or completion of specific immunizations
- TB test, 2-step
- Pennsylvania Criminal Record Check
- Pennsylvania Child Abuse Clearance
- FBI Background Check (includes fingerprinting)
- HIPAA Training and Certification
- Students must carry personal health insurance while participating in an internship
- Students must carry professional student liability insurance coverage while participating in an internship. This coverage is provided by the SHRS group insurance plan and will appear as a charge on the students' tuition bill.
- Some sites may have additional requirements (i.e. drug screen, influenza vaccine, or orientation programs specific to their organization).
- Internship sites may not allow a student to participate in an internship at their site if the background check reports that they have been convicted of a misdemeanor; a felony; or a felonious or illegal act associated with alcohol and/or substance abuse.

**Additional Information:**

- Travel to internship sites is the responsibility of the student. Students are expected to have a car or to provide their own transportation to all remote sites; no exceptions will be made. Not all sites are accessible by public transportation.
- All expenses for transportation, parking, meals, and costs of prerequisites associated with clinical education are the responsibility of the student.
- Approximate cost for clearances is $100, and costs for physical exam and immunization status are dependent on health insurance coverage and provider costs.
- Approximate cost for drug screen is $40.
- The internship is 3 credits, and requires a minimum of 180 hours of student participation.

For more information on internships students are encouraged to contact their academic advisor.

**Department of Occupational Therapy**

**Doctor of Occupational Therapy (OTD)**

The Doctor of Occupational Therapy (OTD) Program is an entry-level educational program, which prepares students for careers as occupational therapists.

The OTD Program is a three-year (9 term) professional course of study including fieldwork, capstone project, and an experiential preceptorship.

Admission to the OTD Program is only available on a full-time basis. The OTD Program begins the first week in June of each year.

The entry-level occupational therapy doctoral degree program has applied for accreditation and has been granted Candidacy Status by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. ACOTE’s telephone number c/o AOTA is (301) 652-AOTA and its Web address is www.acoteonline.org. The program must have a preaccreditation review, complete an on-site evaluation, and be granted Accreditation Status before its graduates will be eligible to sit for the national certification examination for the occupational therapist administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be an Occupational Therapist, Registered (OTR). In addition, all states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination. Note that a felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.

The OTD Program requires that students complete fieldwork education, and an experiential preceptorship at facilities external to the University of Pittsburgh. PLEASE NOTE: All OTD students are required to obtain the following annually - PA criminal record check, PA child abuse history clearance, PA DHS and PA DOE fingerprint background checks, personal health insurance, health screening, drug screening, influenza vaccination, CPR/AED training, and first aid training.

**Admission Requirements and Application Process**
Baccalaureate Degree

Students are admitted into the OTD Program after successful completion of a baccalaureate degree with a minimum cumulative GPA of 3.00 (based on a 4.00 scale).

Prerequisite Courses

Complete the following prerequisite courses within the past 5 years with a minimum grade of B and a minimum GPA in these prerequisites of 3.00 (based on a 4.00 scale).

- Human Anatomy & Physiology (with a laboratory component), 8 credits
- Lifespan Human Development, 3 credits
- Abnormal Psychology, 3 credits
- Statistics, 3 credits

Note: AP credits are not accepted as fulfillment of prerequisite courses

Graduate Record Examination (GRE)

GRE ® General Test scores within the past 5 years at or above the 50th percentile. GRE scores must be sent to the "University of Pittsburgh OTCAS" using institution code 1894. Visit the GRE Web site for more information about the GRE.

Experience in Occupational Therapy

Complete a minimum of 40 hours of volunteer or paid work experience in at least two different occupational therapy practice areas (e.g., pediatrics, geriatrics, medical rehabilitation, psychiatric rehabilitation, home healthcare, school system).

Letters of Recommendation

Submit three letters of recommendation attesting to the applicant's academic and professional abilities (including one from an occupational therapist and one from a college-level instructor). Letters of recommendation are submitted through the Occupational Therapy Centralized Application Service (OTCAS).

Self-Evaluation Essays

Demonstrate evidence of graduate level writing skills in responses to Pitt-OT essay questions, and a personal statement, discussing your strengths, skills, and experiences that will contribute to your success in the OTD Program and your professional goals for becoming an occupational therapist. All essays are submitted through OTCAS.

Technical Standards/Essential Skills

Attest to satisfactory performance of the technical standards/essential skills required for successful completion of the OTD curriculum. Students admitted to the OTD Program must review the Technical Standards and submit a signed form at the time of matriculation.

OTD - Technical Standards

Application Information

All applicants must apply to the OTD Program online using the Occupational Therapy Centralized Application Service (OTCAS). To learn more about the OTCAS application process and to create an OTCAS account, please visit the OTCAS portal.
Applicants are encouraged to apply early in the application cycle, which begins in mid-July each year. Prerequisite courses must be completed by January 1. Official transcripts must be sent directly to OTCAS. Letters of recommendation are submitted electronically through OTCAS. The deadline for applying to the OTD Program is February 1; however, applicants are encouraged to apply before this deadline as the Department of Occupational Therapy begins reviewing complete and verified applications in November for the program starting the following June. Applications are reviewed when all materials, including transcripts and letters of recommendation, have been received and verified by OTCAS and GRE scores are available. OTCAS uses a verification process that can take several weeks. OTCAS will verify your documents before releasing them to the University of Pittsburgh. Applicants should confirm their status as verified with OTCAS.

For questions about the receipt, processing, and verification of an application, please contact OTCAS Customer Service at 617-612-2860, otcasinfo@otcas.org.

**International Applicants**

- **Academic Credential Evaluations** - The Academic Credential Evaluation must include a course by course evaluation and be submitted with your application to OTCAS. If an international applicant has earned an undergraduate or graduate degree in the United States, the Academic Credential Evaluation is not required.

- **Verification of English Language Proficiency** - Applicants for whom English is not their first language must take the iBT (the Internet-based version) of the TOEFL (Test of English as a Foreign Language) or the IELTS (International English Language Testing System), or have a master's degree from an English-speaking university. The minimum TOEFL score accepted is 90 and the minimum IELTS score is Band 7.0. TOEFL scores must be sent electronically through Educational Testing Service (ETS) to institution code 2927. IELTS scores must be mailed to the Department of Occupational Therapy, University of Pittsburgh, 5012 Forbes Tower, Pittsburgh, PA 15260.

The School of Health and Rehabilitation Sciences has specific requirements for international applicants.

**PLEASE NOTE.** Applicants who already have a baccalaureate degree in occupational therapy and are interested in obtaining a master's degree should apply to the Master of Science (MS) in Occupational Therapy Program.

**Master of Science (MS) in Occupational Therapy**

The Master of Science (MS) in Occupational Therapy is a one-year (3-term) graduate program housed within the Department of Occupational Therapy. This advanced practice program is designed for those with a baccalaureate degree in occupational therapy.

Post-professional graduate studies in this field enable occupational therapists to pursue advanced skills in clinical practice, management, education, research, or health and disability policy.

**Admission Requirements and Application Process**

Qualified applicants for the Master of Science (MS) Program in Occupational Therapy must meet the following admission requirements:

- Bachelor's degree in occupational therapy. For international students, a bachelor's degree or diploma must be from a school/university approved by the World Federation of Occupational Therapists (WFOT) in the year that the applicant graduated and/or national governmental institutions that approve/accredit occupational therapy programs to grant a degree in occupational therapy (e.g., Ministry of Health).
- Minimum cumulative grade point average of 3.00 (based on a 4.00 scale).
- Evidence of graduate level writing skills in a self-evaluation essay that discusses goals, strengths, skills, and experiences that will contribute to success in the program and in the profession. The essay should also include a brief statement discussing interest in the field of study and reasons for applying to the University of Pittsburgh.
- Documented evidence of knowledge of rehabilitation through previous paid work experiences, internships or field experiences, or volunteer work experiences.
- Three letters of recommendation, preferably from individuals who have taught the applicant in an academic setting and/or supervised clinical activities. Letters of recommendation should address academic, professional and personal attributes, and potential for successful graduate education.
- Official transcripts from all colleges/universities attended. For international students, original or certified (notarized) copies of all original language academic records (mark sheets, transcripts) from all postsecondary institutions attended. Where the official original documents are issued in
a language other than English, certified English translations must also be submitted. Certified copies of the original certificates or diplomas awarded at the completion of studies must also be submitted.

- Interview (personal or virtual) with the MS Program Director and at least one other faculty member from the Department of Occupational Therapy.

**In addition, internationally educated students will be required to provide:**

- An Academic Credential Evaluation.
- An official score report (from ETS) of the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the written test, 213 on the computer-based test, or 80 on the internet-based test is required from all applicants whose native language is not English and/or who have not completed an academic degree from a college or university in the U.S. where the method of instruction is English. International English Language Testing System (IELTS) scores are also accepted. The minimum IELTS score is 6.5. Exemption can be applied for:
  1. applicants who have completed an undergraduate or graduate degree from a regionally accredited institution in the U.S., or
  2. citizens of a country where the official language is English.

**Application Information**

All applicants must:

- Complete the School of Health and Rehabilitation Sciences ApplyYourself online application;
- Submit the application fee of $50 (U.S.); and
- Submit required documents (Admission Requirements).

**Application Deadlines**

Applications are accepted for enrollment beginning in the Summer term only (May). The deadline for submitting the application and all materials is February 1.

For information about our program, please contact the Department of Occupational Therapy at OTpitt@shrs.pitt.edu.

**Doctor of Clinical Science (CScD) in Occupational Therapy**

The Doctor of Clinical Science (CScD) Program in Occupational Therapy provides doctoral level training in advanced practice, clinical education, and professional leadership. The CScD Program offers six areas of concentration: Master Practitioner (Geriatric, Musculoskeletal, Neurologic, or Pediatric Practice), Clinical Education, and Professional Leadership. Core courses focus on assessment, intervention, evidence-based protocols and guidelines, and data-based decision making. Each core course is paired with a colloquium or clinical rotation that provides students with mentored opportunities to apply their skills in the appropriate setting. Cognate courses focus on theory, evidence, and data collection in the student's chosen area of concentration.

**Admission Requirements and Application Process**

The CScD in Occupational Therapy is an advanced practice doctoral degree designed for occupational therapists who are seeking advanced knowledge and skills. There are no prerequisite courses for this degree however, applicants must have an entry-level baccalaureate or master's degree in occupational therapy from a program accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) or approved by the World Federation of Occupational Therapy (WFOT).

**Occupational Therapists with Baccalaureate Degrees**

Occupational therapists with a baccalaureate degree in occupational therapy, and no additional graduate degrees, should apply to the Master of Science (MS) in Occupational Therapy. Credits in the MS program will satisfy the requirements for the first 30 credits of the required 72 credits of the CScD Program.
Occupational Therapists with Master's Degrees

Occupational therapists with 1) an entry-level master's degree in occupational therapy, or 2) a baccalaureate degree in occupational therapy and an advanced master's degree in occupational therapy (or another field) may be able to transfer up to 30 credits from their master's degree, providing that these credits meet requirements in the CScD curriculum.

All Applicants

In addition to the admission requirements, applicants must provide evidence of:

- National certification in occupational therapy (NBCOT) or eligibility
- Pennsylvania state licensure in occupational therapy or eligibility
- Minimum cumulative graduate GPA of 3.00 on a 4.00 point scale
- Successful completion (3.00 on a 4.00 point scale) of a statistics or research methods course within the past 5 years
- Graduate Record Examination (GRE) General Test scores at or above the 50th percentile within the past 5 years
- Graduate level writing skills in an essay that addresses (a) rationale for pursuing an advanced practice doctorate, (b) chosen area of concentration, and (c) how the program is likely to change the applicant's practice
- Professional skills and conduct, collegiality, oral and written communication skills, and leadership through two letters of recommendation

Application Information

All applicants must:

- Complete the School of Health and Rehabilitation Sciences ApplyYourself online application;
- Submit the application fee of $50 (U.S.);
- Submit required documents (Admission Requirements).

International Applicants

- An Academic Credential Evaluation.
- An official score report (from ETS) of the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the written test, 213 on the computer-based test, or 80 on the internet-based test is required from all applicants whose native language is not English and/or who have not completed an academic degree from a college or university in the U.S. where the method of instruction is English. International English Language Testing System (IELTS) scores are also accepted. The minimum IELTS score is 6.5. Exemption can be applied for:
  1. applicants who have completed an undergraduate or graduate degree from a regionally accredited institution in the U.S., or
  2. citizens of a country where the official language is English.

Application Deadlines

Applications are accepted on a rolling basis for students intending to start the program in July of the same calendar year.

For More Information

Contact the Department of Occupational Therapy at (412) 383-6620 or OTpitt@shrs.pitt.edu.

Master of Occupational Therapy (MOT)
The Department of Occupational Therapy now offers a Doctor of Occupational Therapy (OTD) Program.

The Master of Occupational Therapy (MOT) Program is only available to candidates with a University of Pittsburgh Freshman Guarantee for Occupational Therapy who began undergraduate studies at the University of Pittsburgh in Fall of 2015 or 2016. Candidates with Freshman Guarantee status should contact the Department of Occupational Therapy at OTpitt@shrs.pitt.edu or 412-383-6620 to inquire about the MOT application process.

The MOT Program prepares students for entry-level practice as occupational therapists. The MOT Program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. ACOTE's telephone number, c/o AOTA, is 301-652-AOTA and its Web address is www.acoteonline.org.

Graduates of the Program are eligible to sit for the National Certification Examination for the Occupational Therapist, administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this examination, the graduate will be an Occupational Therapist, Registered (OTR). In addition, most states require licensure to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination. A felony conviction may affect a graduate's ability to sit for the NBCOT Certification Examination or obtain a state license.

PLEASE NOTE: The MOT Program requires that students complete fieldwork education at facilities external to the University of Pittsburgh. All MOT students are required to obtain the following annually - PA criminal record check, PA child abuse history clearance, PA DHS and PA DOE fingerprint background checks, personal health insurance, health screening, drug screening, influenza vaccination, CPR/AED training, and first aid training.

Admission Requirements and Application Process

Admission Requirements

The MOT Program is only available to candidates with a University of Pittsburgh Freshman Guarantee for Occupational Therapy who began undergraduate studies at the University of Pittsburgh in Fall of 2015 or 2016.

Baccalaureate Degree

Students are admitted into the MOT Program after successful completion of a baccalaureate degree and successfully maintaining the Freshman Guarantee requirements.

Prerequisite Courses

Complete the following prerequisite courses with a minimum grade of C:

- Human anatomy & physiology (with a laboratory component), 4 credits
- Behavioral sciences (psychology, sociology, and/or anthropology), 6 credits
- Statistics, 3 credits

Note: AP credits are not accepted as fulfillment of prerequisite courses

Graduate Record Examination (GRE)

Complete the GRE ® General Test. Please arrange to send your GRE scores to the University of Pittsburgh using institution code 1894. Visit the GRE Web site for more information about the GRE.

Experience in Occupational Therapy
Complete a minimum of 20 hours of volunteer or paid work experience in at least two different occupational therapy practice areas (e.g., pediatrics, geriatrics, medical rehabilitation, psychiatric rehabilitation, home healthcare, school system).

Letters of Reference

Submit three letters of reference (one from an occupational therapist, and preferably one from a college-level instructor). Letters of Reference must be submitted directly to the Department of Occupational Therapy by the recommender. References can be emailed to OTpitt@shrs.pitt.edu or mailed to:

Department of Occupational Therapy
5012 Forbes Tower
Pittsburgh, PA 15260

Self-Evaluation Essays

Demonstrate evidence of graduate level writing skills in an essay (personal statement), discussing your strengths, skills, and experiences that will contribute to your success in the MOT Program and your professional goals for becoming an occupational therapist. The Self-Evaluation Essay is submitted to the Department of Occupational Therapy with the application.

Technical Standards/Essential Skills

Attest to satisfactory performance of the technical standards/essential skills required for successful completion of the MOT curriculum. Students admitted to the MOT Program must review the Technical Standards and submit a signed form at the time of matriculation.

Application Information

Applicants to the MOT Program apply by contacting the Department of Occupational Therapy at OTpitt@shrs.pitt.edu and requesting an application.

The MOT Program begins in June each year. To be considered for admission your application must be submitted by October 15. Prerequisite courses must be completed by January 1. The Department of Occupational Therapy begins reviewing complete applications and offering admission in November for the program starting the following June. Applications are complete when all materials, including letters of recommendation, have been received and GRE scores are available.

Official transcripts must be sent directly to the Department of Occupational Therapy at:

Department of Occupational Therapy
5012 Forbes Tower
Pittsburgh, PA 15260

For questions about the receipt, and processing of your application, please contact OTpitt@shrs.pitt.edu.

Program Requirements

The MOT Program is a two-year professional course of study requiring 78 credits, including fieldwork education. The MOT Program begins in June each year.

Certification
Graduates of the program will be eligible to sit for the National Certification Examination for the Occupational Therapist, administered by the National Board for Certification in Occupational Therapy, Inc. (NBCOT). After successful completion of this examination, the graduate will be an Occupational Therapist, Registered (OTR). In addition, most states require licensure to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination. A felony conviction may prevent a graduate's ability to sit for the NBCOT Certification Examination or attain a state licensure.

Contact Information

Department of Occupational Therapy
School of Health and Rehabilitation Sciences
5012 Forbes Tower
Pittsburgh, PA 15260
412-383-6620
Fax: 412-383-6613
E-mail: OTpitt@shrs.pitt.edu

Doctor of Clinical Science (CScD)

Program Requirements

The Doctor of Clinical Science (CScD) Program in Occupational Therapy requires 72 post-baccalaureate credits. Students with an entry-level master's degree in occupational therapy or a baccalaureate degree in occupational therapy and an advanced level master's degree in occupational therapy or another field may be eligible to transfer 30 credits from their master's degree, leaving a remaining 42 credits, thus being able to complete the program in 4 terms or 13 months. Students without a master's degree will be required to take all 72 credits, culminating in a longer program of study.

Curriculum and Course Descriptions

The program requires the completion of 72 credits (up to 30 credits may be transferred from a master's degree, potentially leaving a remaining 42 credits in the CScD program). Each student will be advised and evaluated by a doctoral committee who will oversee the development, implementation and grading of Preliminary and Comprehensive Examinations necessary to complete the program. The plan of study will be customized to each student based on his or her preferred area of concentration, and will be comprised of core courses and cognate courses. Required courses are held in the summer, fall, and spring terms.

Clinical Science Doctoral Committee

Each student will be supervised by a doctoral committee that will be formed by the end of the first term in the program. The doctoral committee will be comprised of 3 faculty, and at least 2 faculty must be appointed in the Department of Occupational Therapy. This committee will oversee the development, implementation and grading of the preliminary and comprehensive examinations.

Preliminary Examination

The preliminary examination is a written examination posed by members of the doctoral committee. Questions will address assessment concepts, intervention/education concepts, and evidence in the student's chosen area of concentration. Students must successfully pass the preliminary examination before they can propose and receive approval for their capstone project.

Comprehensive Examination
A capstone project will be developed and implemented by the student in collaboration with the doctoral committee. The comprehensive examination is the culminating written summary and oral defense of the capstone project. Students must successfully pass both the written and oral components of the comprehensive examination to complete the CScD program.

**Plan of Study**

**Core Courses**

All students will take the following eight core courses:

- OT 3000 - Advancements in Functional Assessment
- OT 3001 - Advancements in Functional Assessment Colloquium
- OT 3100 - Evidence Analysis for Improving Clinical Interventions
- OT 3101 - Evidence Analysis for Improving Clinical Interventions Colloquium
- OT 3200 - Evidence-Based Protocols and Practice Guidelines
- OT 3201 - Evidence-Based Protocols and Practice Guidelines: Clinical Rotation
- OT 3300 - Data-Based Decision Making for Clinical Practice
- OT 3301 - Data-Based Decision Making for Clinical Practice: Clinical Rotation

**Cognate Courses**

Cognate courses are specific to the student's chosen area of concentration or track.

**Area of Concentration: Master Practitioner (Geriatrics, Pediatrics, Musculoskeletal, Neurological)**

- OT 3400 - Master Practitioner Cognate Seminar 1
- OT 3500 - Master Practitioner Cognate Seminar 2
- OT 3600 - Master Practitioner Cognate Seminar 3
- OT 3700 - Master Practitioner Cognate Practicum and Capstone

**Area of Concentration: Clinical Educator**

- OT 3401 - Clinical Educator Cognate Seminar 1
- OT 3501 - Clinical Educator Cognate Seminar 2
- OT 3601 - Clinical Educator Cognate Seminar 3
- OT 3701 - Clinical Educator Cognate Practicum and Capstone

**Area of Concentration: Professional Leadership**

- OT 3402 - Professional Leadership Cognate Seminar 1
- OT 3502 - Professional Leadership Cognate Seminar 2
- OT 3602 - Professional Leadership Cognate Seminar 3
- OT 3702 - Professional Leadership Cognate Practicum and Capstone

**Academic Standards**
In addition to following University-wide academic rules and regulations as detailed in the General Academic Regulations section of this Catalog, the CSeD program is regulated by the School of Health and Rehabilitation Sciences Academic Standards, as well as the departmental Student Handbook on Academic and Clinical Requirements.

**Doctor of Occupational Therapy (OTD)**

**Degree Requirements**

The OTD Program is a three-year (9 term) professional course of study requiring 108 credits, including fieldwork education, an experiential preceptorship, and a capstone project. Students in the OTD Program must successfully complete all didactic coursework, Level II fieldwork, and pass a competency examination prior to the commencement of the experiential preceptorship. Students must complete Level II fieldwork and the experiential preceptorship within 24 months following completion of the didactic portion of the program.

**Curriculum and Course Descriptions**

**Plan of Study**

**Term 1 - Summer Term - 8 Credits**

**Foundational Skills**

- OT 2200 - Foundations of Occupation
- OT 2201 - Body Functions and Structures: Anatomy**
- OT 2202 - Therapeutic Approaches 1**
- OT 2203 - Clinical Seminar 1

**Term 2 - Fall Term - 15 Credits**

**Assessment and Analysis**

- OT 2204 - Human Performance Analysis**
- OT 2205 - Neurobehavioral Science**
- OT 2206 - Clinical Conditions 1
- OT 2207 - Principles of Assessment**
- OT 2208 - Critical Appraisal of Evidence
- OT 2209 - Clinical Seminar 2

**Term 3 - Spring Term - 15 Credits**

**Intervention I**

- OT 2210 - Psychosocial/Cognitive Theory and Practice**
- OT 2211 - Rehabilitation Theory and Practice**
- OT 2212 - Clinical Conditions 2
- OT 2213 - Occupational Therapy and the Health System
- OT 2214 - Therapeutic Approaches 2**
- OT 2215 - Fieldwork Education A (FW 1)**
- OT 2216 - Clinical Seminar 3

**Term 4 - Summer Term - 8 Credits**
Intervention II

- OT 2217 - Neurorehabilitation Theory and Practice**
- OT 2218 - Biomechanical Theory and Practice**
- OT 2219 - Fieldwork Education B (FW 1)**
- OT 2220 - Clinical Seminar 4

Term 5 - Fall Term - 13 Credits

Intervention III

- OT 2221 - Developmental Theory and Practice**
- OT 2222 - Productive Aging Theory and Practice**
- OT 2224 - Management of Occupational Therapy Practice
- OT 2225 - Project Development 1
- OT 2226 - Fieldwork Education C (FW 1)**
- OT 2227 - Clinical Seminar 5

Term 6 - Spring Term - 13 Credits

Clinical Synthesis I

- OT 2228 - Fieldwork Education D (FW 2)**
- OT 2229 - Fieldwork Education E (FW 2)**

Term 7 - Summer Term - 7 Credits

Clinical Synthesis II

- OT 2229 - Fieldwork Education E (FW 2)**

Term 8 - Fall Term - 15 Credits

Leadership I

- OT 3203 - Advanced Concepts in Clinical Reasoning
- OT 3204 - Advanced Concepts in Health Policy and Advocacy
- OT 3205 - Leadership Development
- OT 3206 - Advanced Theory and Practice**
- OT 3207 - Project Development 3

Term 9 - Spring Term - 14 Credits

Leadership II

- OT 3208 - Experiential Preceptorship (FW 3)**
- OT 3209 - Professional Development Seminar

**Course includes laboratory, fieldwork, or experiential component with associated term fee.

PLEASE NOTE: The OTD Program requires that students complete fieldwork education, and an experiential preceptorship at facilities external to the University of Pittsburgh. All OTD students are required to obtain the following annually - PA criminal record check, PA child abuse history clearance, PA DHS and PA DOE fingerprint background checks, personal health insurance, health screening, drug screening, influenza vaccination,
complete Level II fieldwork is critically reviewed by the Academic Fieldwork Coordinator and occupational therapy faculty. Satisfactory completion
of targeted interventions by the student may be required prior to enrolling in a subsequent Level II fieldwork. The faculty reserves the right to place a
student at a site in the Greater Pittsburgh Area based on the student's academic performance and/or professional behavior.

Fieldwork and Experiential Preceptorship

Fieldwork education and the Experiential Preceptorship are essential parts of professional doctoral preparation and are integrated as components of
the curriculum design. They are an extension of the OTD Program within the clinical/community setting. The fieldwork experience provides the
OTD student with the opportunity to learn professional responsibilities through modeling by qualified and experienced personnel and to practice
these responsibilities in a supervised setting. The Experiential Preceptorship provides an in-depth professional experience and the completion of a culminating (capstone) project. Fieldwork education and the Experiential Preceptorship are only conducted in sites that have a signed agreement (Memorandum of Understanding) with the School of Health and Rehabilitation Sciences. This agreement formally identifies the responsibilities of the University and the site.

Fieldwork education includes Level I and Level II experiences. Level I fieldwork occurs during Term 3 (OT 2215 - Fieldwork Education A), Term 4
(OT 2219 - Fieldwork Education B), and Term 5 (OT 2226 - Fieldwork Education C). Level I fieldwork is designed to enrich didactic coursework
direct observation and participation in selected aspects of the occupational therapy process. Level I fieldwork is supervised by qualified personnel (e.g., currently licensed or otherwise regulated occupational therapy practitioners, psychologists, physician assistants, teachers, social workers, nurses, and others). OTD students are assigned to Level I fieldwork sites in the Greater Pittsburgh Area by the Academic Fieldwork Coordinator in collaboration with the occupational therapy faculty. The qualifications of individuals supervising students during Level I fieldwork are reviewed by the Academic Fieldwork Coordinator to ensure that a meaningful learning experience can be provided.

Level II fieldwork is completed in Terms 6 and 7 (OT 2228 - Fieldwork Education D; OT 2229 - Fieldwork Education E). Level II fieldwork is
distinct from Level I fieldwork. Students must successfully complete Level I fieldwork experiences prior to enrolling in Level II fieldwork. Level II fieldwork is an in-depth experience in delivering occupational therapy services to clients in traditional and/or emerging settings consistent with our OTD Program's curriculum design. Each OTD student is assigned to specific Level II fieldwork sites to ensure exposure to a variety of clients across the life span and to a variety of settings. Students can complete Level II fieldwork in a minimum of one setting if it is reflective of more than one practice area, or in a maximum of four different settings. The OTD Program only uses sites within the United States that allow for supervision by an occupational therapist who meets state regulations and has a minimum of one year of practice experience, subsequent to the requisite initial certification. Level II fieldwork is a minimum of the equivalent of 24 full-time work weeks. Level II fieldwork may be completed on a part-time basis as long as it is at least 50% of a full-time equivalent at the site. The OTD student is assigned to a Level II fieldwork site by the Academic Fieldwork Coordinator and signs the Level II Fieldwork Acknowledgment Agreement. The performance of a student who does not successfully complete Level II fieldwork is critically reviewed by the Academic Fieldwork Coordinator and occupational therapy faculty. Satisfactory completion of targeted interventions by the student may be required prior to enrolling in a subsequent Level II fieldwork. The faculty reserves the right to place a student at a site in the Greater Pittsburgh Area based on the student's academic performance and/or professional behavior.

After successful completion of Level II fieldwork (OT 2228; OT 2229), the OTD student engages in didactic coursework and training of advanced
skills beyond the generalist level of an occupational therapist. OTD students enroll in OT 3208-Experiential Preceptorship (doctoral experiential component) (Term 9) after they have successfully completed all didactic coursework, Level I and Level II fieldworks, and a competency requirement. The Experiential Preceptorship (OT 3208) is a 16 week (640 hour) in-depth experience in clinical practice skills, research skills, administration, leadership, program and policy development, advocacy, and/or education and includes the completion of a culminating (capstone) project. The focus of the Experiential Preceptorship is on the development of skills for increased autonomy as a contributor to advancing occupational therapy practice. Preceptorships are completed in a novel practice setting or a traditional setting with a novel program, and have a connection with community issues or problems. Students are assigned a faculty mentor who oversees their Experiential Preceptorship, including the development of learning objectives and plans for supervision. The Experiential Preceptorship is distinct from Level I and II fieldwork and is the final step in the preparation of the OTD student for entry-level practice.

These learning experiences (Fieldwork education and Experiential Preceptorship) prepare the OTD student to assume the roles of practitioner, manager, and contributor upon graduation from the academic program. Prior fieldwork, volunteer, and/or work experience hours cannot be applied towards the Experiential Preceptorship hours, and a student's current work setting cannot serve as a site for his/her Experiential Preceptorship. The Experiential Preceptorship may be completed on a part-time basis.

The culminating (capstone) project is a multi-faceted investigative assignment that students begin in Term 3. It is designed to encourage students to think critically, solve challenging problems, collaborate with other professionals, and to develop advanced skills in communication, research, teamwork, planning, leadership, self-reliance, professionalism, and advocacy - skills that will prepare them to respond positively and confidently to the many opportunities and challenges in today's evolving and increasing complex practice settings. Although, the learning objectives for the Experiential Preceptorship and culminating project address all three roles of the occupational therapist - practitioner, manager, and contributor - the
focus is on the development of skills for increased autonomy as a contributor to advancing occupational therapy practice. The projects address community issues or problems, and are implemented in novel practice settings.

Level II fieldwork (OT 2228; OT 2229) and the Experiential Preceptorship (OT 3208) must be completed within 24 months following completion of the didactic portions of the OTD Program. OTD students are responsible for securing all required resources in preparation for and during Level I and II fieldworks and the Experiential Preceptorship including but not limited to transportation, health screenings and associated testing, health insurance, drug screening, influenza vaccination, CPR/AED training, first aid training, liability insurance, background checks and clearances, parking, housing, food, and clothing.

Academic Standards

In addition to following University-wide academic rules and regulations as detailed in the General Academic Regulations section of this Catalog, the OTD Program is regulated by the School of Health and Rehabilitation Sciences Academic Standards, as well as the policies and procedures in the SHRS Graduate Student Handbook and the OTD Student Manual.

Master of Occupational Therapy (MOT)

The Department of Occupational Therapy now offers a Doctor of Occupational Therapy (OTD) degree program.

The Master of Occupational Therapy (MOT) degree program is only available to candidates with a University of Pittsburgh Freshman Occupational Therapy Guarantee who began undergraduate studies at the University of Pittsburgh in Fall of 2015 or 2016. Candidates with Freshman Occupational Therapy Guarantee status should contact the Department of Occupational Therapy at OTpitt@shrs.pitt.edu or 412-383-6620.

Degree Requirements

The entry-level MOT Program is a two-year professional course of study requiring 78 credits, including fieldwork education.

Certification

Graduates of the Program are eligible to sit for the National Certification Examination for the Occupational Therapist, administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this examination, the graduate will be an Occupational Therapist, Registered (OTR). In addition, most states require licensure to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination. A felony conviction may affect a graduate's ability to sit for the NBCOT Certification Examination or obtain a state license.

Curriculum and Course Descriptions

There are a total of 78 credits for the MOT Program and a minimum GPA of 3.00 (based on a 4.00 scale) is required for graduation. Most courses in the MOT curriculum require the successful completion of one or more prerequisite courses (see individual course descriptions for prerequisites).

Plan of Study

Term 1* - Summer Term - 7 Credits

- OT 2100 - Foundations of Occupation Science and Occupational Therapy**
- HRS 2022 - Human Anatomy**
- OT 2203 - Clinical Seminar 1

Term 2 - Fall Term - 15 Credits
Term 3 - Spring Term - 15 Credits

- OT 2107 - Psychosocial/Cognitive Theory and Practice / MOT **
- OT 2108 - Clinical Neurology and Orthopedics
- OT 2111 - Occupational Therapy and the Health Care System
- OT 2113 - Rehabilitation Theory and Practice / MOT **
- OT 2214 - Therapeutic Approaches 2 **
- OT 2216 - Clinical Seminar 3

Term 4 - Summer Term - 7 Credits

- OT 2112 - Neurorehabilitation Theory and Practice**
- OT 2114 - Biomechanical Theory and Practice / MOT **

Term 5 - Fall Term - 14 Credits

- OT 2115 - Developmental Theory and Practice / MOT **
- OT 2116 - Integrative Capstone Seminar
- OT 2117 - Management of Occupational Therapy Practice / MOT
- OT 2118 - Special Topics in Occupational Therapy Theory and Practice **
- OT 2227 - Clinical Seminar 5

Terms 6 & 7 - Spring and Summer Terms - 20 Credits***

- OT 2119 - OT Fieldwork Education A (FW 2)
- OT 2120 - OT Fieldwork Education B (FW 2)

* Term 1 begins in early June.
** Includes laboratory component with associated fee.
*** Fieldwork A and B must be completed within 3 years of completing didactic coursework. A misdemeanor or felony charge or conviction may affect a student's ability to complete courses with a fieldwork component.

PLEASE NOTE: The MOT Program requires that students complete fieldwork education at facilities external to the University of Pittsburgh. All MOT students are required to obtain the following annually - PA criminal record check, PA child abuse history clearance, PA DHS and PA DOE fingerprint background checks, personal health insurance, health screening, drug screening, influenza vaccination, CPR/AED training, and first aid training. Additionally, in order to become licensed, many states will inquire as to whether the applicant has been convicted of a misdemeanor, a felony, or felonious or illegal act associated with alcohol and/or substance abuse.

Academic Standards
In addition to following University-wide academic rules and regulations as detailed in the General Academic Regulations section of this Catalog, the MOT Program is regulated by the School of Health and Rehabilitation Sciences Academic Standards, as well as the departmental Student Manual.

**Master of Science (MS) in Occupational Therapy**

**Program Requirements**

The program begins in the Summer term (May) each year and requires the completion of 33 credits (9 credits in Professional Foundations; 12 credits in Assessment/Analysis; 12 credits in Intervention). A Comprehensive Examination is required at the end of the Spring term and prior to graduation.

**Curriculum and Course Descriptions**

**Plan of Study:**

The program requires the completion of 33 credits (9 credits in Professional Foundations; 12 credits in Assessment/Analysis; 12 credits in Intervention).

The following is a typical plan of study for students enrolled in the Master of Science (MS) Program in Occupational Therapy (OT).

**Summer Term - 9 Credits**

- OT 2200 - Foundations of Occupation
- OT 2202 - Therapeutic Approaches 1
- OT 2218 - Biomechanical Theory & Practice
- OT 2203 - Clinical Seminar 1
- OT 2241 - Clinical Preceptorship 1

**Fall Term - 12 Credits**

- OT 2221 - Developmental Theory and Practice OR OT 2222 Productive Aging Theory and Practice
- OT 2207 - Principles of Assessment
- OT 2224 - Management of Occupational Therapy Practice
- OT 2208 - Critical Appraisal of Evidence
- OT 2209 - Clinical Seminar 2
- OT 2242 - Clinical Preceptorship 2

**Spring Term - 12 Credits**

- OT 2210 - Psychosocial/Cognitive Theory and Practice
- OT 2213 - Occupational Therapy and the Health System
- OT 2240 - Special Topics in Occupational Therapy
- OT 2214 - Therapeutic Approaches 2
- OT 2216 - Clinical Seminar 3
- OT 2243 - Clinical Preceptorship 3

**Comprehensive Examination:**

Each student must successfully complete a Comprehensive Examination. This examination is used to determine mastery of the core content in the curriculum.
Preceptorship

Preceptorships provide advanced experiential learning in an area of occupational therapy practice for the purpose of advancing skills and knowledge in that practice area. For internationally educated occupational therapists a clinical preceptorship can also be customized for the purpose of developing familiarity with the U.S. health care system.

MS students have taken advantage of preceptorships to gain advanced skills (e.g., burns rehabilitation), participate in program development activities (e.g., designing an energy conservation and work simplification program for individuals with chronic respiratory diseases), develop teaching modules for entry-level program courses (e.g., assistive technology, neuroscience and neurorehabilitation), develop familiarity with health and disability policy, and design and implement scholarly projects.

For all preceptorship experiences, in addition to the site mentor, students are assigned a faculty mentor who guides them through the preceptorship. The student and faculty mentor meet prior to the start of the preceptorship to discuss goals for the preceptorship, a plan of action for achieving the goals, and the evaluation process. The student and faculty mentor meet throughout the preceptorship to discuss the student's progress. Students find the preceptorships to be rewarding experiences that advance their clinical skills and career development.

Department of Physical Therapy

The Department of Physical Therapy offers three academic programs of study:

- DPT program leading to the DPT degree
- Joint DPT/PhD program leading to a DPT degree and a PhD in Bioengineering
- M.S. in Health & Rehabilitation Sciences with a concentration in neuromuscular or musculoskeletal physical therapy

Physical Therapy, DPT

Doctor of Physical Therapy (DPT) Degree

The Doctor of Physical Therapy (DPT) program is the entry-level educational program which prepares students for careers as physical therapists. Upon successful completion of the curriculum, a student is eligible for the licensure examination, which is required to be a practicing physical therapist. The goal of the DPT curriculum is to prepare students to become self-directed, self-accountable physical therapists who can function in a cost-effective manner in all settings, and with persons of all ages. Graduates of the program will be prepared to enhance human movement and function through the use of evidence-based practice principles. Physical therapy graduates will have a foundation on which to base further knowledge and skills in specialty areas and to contribute to development of the art and science of physical therapy.

Contact Information

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E-mail: ptinfo@shrs.pitt.edu
www.shrs.pitt.edu/dpt/

Application Process
Admission to the Doctor of Physical Therapy program is only available on a full-time basis. The DPT program begins the first week of June each year. All applicants must apply to the program through the PT Centralized Application Service (PTCAS). This information is located on the Department website.

Admissions Requirements

To be eligible to apply to the DPT program, applicants must have earned a bachelor's degree, taken and successfully passed all prerequisite coursework, taken the Graduate Record Exam (GRE-general) within the last five years, and must demonstrate evidence of experience in a physical therapy setting in either a volunteer or paid capacity.

- Graduate Record Examination - (GRE -general). GRE scores must be sent to institution code 7754
- Minimum GPA of 3.0 (based on a 4.0 scale)
- 3 letters of recommendation: 1 from a licensed physical therapist (from applicant's volunteer or work experience in a PT setting); 1 from a college level professor; 1 from either of the following: a licensed physical therapist or a supervisor/employer (preferably in a healthcare or related setting).
- Demonstrated evidence of adequate exposure to the field of physical therapy and an appreciation of the breadth, depth, and scope of practice. This can be accomplished through either volunteer or paid work experience in a physical therapy setting; there is no minimum number of hours required. It is preferable for applicants to show evidence of the willingness to work with a variety of patients in different physical therapy settings.
- The Department faculty have outlined the Technical Standards deemed essential for successful completion of the DPT curriculum. Students admitted to the DPT program must review the Technical Standards and submit a signed form at the time of matriculation.
- Please note that many clinical sites will require a Child Abuse clearance (Act 33), Criminal Background check (Act 34), and a drug screen prior to participation in a clinical education experience. If you do not have a clean background check for either Act 33/34 clearance, or a clean drug screen you may not be able to participate in Clinical Education and therefore will not be able to meet the DPT requirements for graduation. Additionally, in order to become licensed, many states will inquire as to whether the applicant has been convicted of a misdemeanor, a felony, or a felonious or illegal act and if you have a record you may not be able to become licensed to practice your profession after graduation.

Prerequisite Coursework (minimum credit hours listed is based on a semester system equivalent)

- Chemistry I and II sequence with labs, 8 credit hours
- Physics I and II sequence with labs, 8 credit hours
- Biology I and II sequence with labs, 8 credit hours
- Anatomy (human, vertebrate, comparative or anatomical kinesiology), 3 credit hours
- Physiology (human physiology preferred), 3 credit hours
* A two course sequence of anatomy/physiology may meet the anatomy and physiology requirements as long as there is a total of 6 credit hours
**Science courses must be for science majors or pre-med majors. Introductory or remedial courses are not accepted as prerequisites.
- Two courses in Psychology: should include a general psychology course and a specialized psychology course such as: developmental psychology, abnormal psychology, psychology of disability, sports psychology - 6 credit hours
- Statistics, 3 credit hours
- English Writing (English composition or an upper-division writing course), 3 credit hours

At the time of application no more than 2 courses can be outstanding and must be completed prior to starting the program. Courses MUST BE completed within the past 5 years.

Academic Standards

In addition to the University-wide academic rules and regulations as detailed in the General Academic Regulations section of this bulletin, the DPT program is regulated by the SHRS Academic Standards.

Statute of Limitations

All requirements of the DPT must be completed within three years. Extension of the statute of limitations may be granted if there are extenuating circumstances. Such requests, listing reasons for the extension and the amount of additional time needed, must be approved by the department chair.
Comprehensive Examinations

Students in the DPT program are required to pass a written comprehensive examination before the Doctor of Physical Therapy degree can be awarded. The written comprehensive examination is a cumulative examination covering the core clinical sciences and focusing on physical therapy practice.

Degree Requirements

The Doctor of Physical Therapy program is a three-year (9 semester) professional course of study including clinical internships.

DPT Curriculum

Our rigorous curriculum is built around 4 key areas: basic science, clinical science, leadership & professional development, and critical inquiry. The DPT plan of study integrates the basic sciences and clinical practice, emphasizes evidence based practice and includes a comprehensive array of course offerings in musculoskeletal, neuromuscular, integumentary, cardiopulmonary, geriatric, and pediatric physical therapy, as well as course content related to leadership & professional development.

We want to make sure our graduates are well prepared to enter the workforce so we complement our didactic education program with a clinical program that includes more than 90 weeks of clinical internships. The curriculum is designed to emphasize early and intensive integration of our students into the clinical environment throughout their educational program. Our students begin their clinical affiliations during the 2nd semester in the program and have a 1 year internship at the end of their didactic phase of the plan of study.

Physical Therapy/Bioengineering, DPT/PhD

The Doctor of Physical Therapy (DPT) - PhD in Bioengineering program combines the entry-level DPT leading to licensure as a physical therapist, with a PhD in Bioengineering that will prepare the student to become an independent researcher. The program will integrate clinical and research experiences, with students receiving mentorship from faculty in the departments of Physical Therapy and Bioengineering. Students should have a Bachelor's degree or higher in engineering or engineering-related discipline, with a strong interest in physical therapy.

Contact Information

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Co-Director, DPT-PhD Program
Department of Physical Therapy
Bridgeside Point 1, Suite 210
Pittsburgh, PA 15219-3130
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Fax: 412-648-5970
E-mail: psparto@pitt.edu

Application Process

Applications will need to be submitted through the PT Centralized Application Service (PTCAS) by mid November for admission to the program the following June. The application is reviewed by faculty in both departments.

Admission Requirements

Students will need to meet the admission requirements of both programs. Applicants must have a minimum of a Bachelor's degree in a field of engineering or closely related (e.g. physics, or applied mathematics, kinesiology). Applicants must demonstrate evidence of exposure to the field of PT through volunteer or work experience. Applicants must submit 4 letters of reference: one physical therapist with whom the student has
volunteered or worked for, two academic advisors, and one work supervisor. A minimum GPA of 3.0 is required but competitive applicants typically have a 3.5 GPA or greater. Applicants must take the GRE exam; typically, admitted students have GRE scores greater than the 50th percentile.

Prerequisite Coursework (minimum credit hours listed is based on a semester system equivalent)

- Chemistry I and II sequence with labs, 8 credit hours
- Physics I and II sequence with labs, 8 credit hours
- Biology I and II sequence with labs, 8 credit hours
- Anatomy (human, vertebrate, comparative or anatomical kinesiology), 3 credit hours
- Physiology (human physiology preferred), 3 credit hours

*A two course sequence of anatomy/physiology may meet the anatomy and physiology requirements as long as there is a total of 6 credit hours

**Science courses must be for science majors or pre-med majors. Introductory or remedial courses are not accepted as prerequisites.

- Two courses in Psychology: should include a general psychology course and a specialized psychology course such as: developmental psychology, abnormal psychology, psychology of disability, sports psychology - 6 credit hours
- Statistics, 3 credit hours
- English Writing (English composition or an upper-division writing course), 3 credit hours

At the time of application no more than 2 courses can be outstanding and must be completed prior to starting the program. Courses MUST BE completed within the past 5 years.

Academic Standards

In addition to the University-wide academic rules and regulations as detailed in the General Academic Regulations section of this bulletin, the DPT program is regulated by the SHRS Academic Standards.

Curriculum Overview

Students will follow the typical plan of study for DPT students for the initial eight terms (i.e. 2 2/3 years) of the program. Then students will follow the plan of study for PhD students in Bioengineering. Clinical internships and research experiences will be performed throughout the program. At a minimum, the program will take 6 years to complete. After completing the didactic and clinical requirements of the DPT program, the student will be allowed to take the licensing exam. Students are required to write and orally defend a dissertation to complete their PhD degree.

DPT Curriculum

The course requirements for the DPT include the following:

- Basic Science (Anatomy, Neuroscience, Exercise Physiology, Pharmacology)-17 credits
- Clinical Science (Kinesiology, Musculoskeletal PT, Neuromuscular PT, Cardiopulmonary PT, Patient Management, Human Disease, Geriatrics Growth and Development)-55 credits
- Critical Inquiry (Research Methods, Evidence-Based Practice) -9 credits
- Leadership and Professional Development-7 credits
- Clinical Education-36 credits

Total number of credit hours: 124 credits. Students are required to pass a written comprehensive examination before the Doctor of Physical Therapy degree can be awarded. The written comprehensive examination is a cumulative examination covering the core clinical sciences and focusing on physical therapy practice.

Courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Science (Anatomy, Neuroscience, Exercise Physiology, Pharmacology)</td>
<td>16</td>
</tr>
<tr>
<td>Clinical Science (Kinesiology, Musculoskeletal PT, Neuromuscular PT, Cardiopulmonary PT, Patient Management, Human Disease, Geriatrics Growth and Development)</td>
<td>52</td>
</tr>
</tbody>
</table>
PhD Requirements

The course requirements for the PhD in bioengineering for the combined program include the following:

- Bioengineering Track Courses-9 credits
- Graduate Electives-6 credits
- Seminar-5 credits total-4 credits must be Bioengineering Seminar
- Graduate Engineering Mathematics-3 credits
- Statistics for Bioengineers-3 credits
- Societal, Political, and Ethical Issues in Bioengineering-3 credits
- Teaching Practicum-2 credits
- Grant Writing in Bioengineering-1 credit
- Doctoral Dissertation Research-40 credits

Total number of credit hours: 72 credits minimum (plus the credits associated with the remedial courses, as applicable.) Students typically take the PhD preliminary exam after their first year in the program, and PhD proposal (comprehensive examination) is presented generally at the end of the second year. A final public PhD defense is made by each PhD candidate based on the student's research work.

Physical Therapy - Musculoskeletal Physical Therapy Concentration, MS

This program is designed for the practicing physical therapy professional who has already earned an entry-level degree in physical therapy. This post-professional graduate plan of study enables physical therapists to improve their clinical knowledge and clinical skills through a specific program of advanced physical therapy practice and scholarship. The Master of Science in Health and Rehabilitation Science program offers a choice of concentrations in Physical Therapy: Musculoskeletal Physical Therapy and Neuromuscular Physical Therapy. This program is designed to provide advanced clinical skills in the areas of musculoskeletal and neuromuscular physical therapy. The program leads to a professional clinical degree at the post baccalaureate level. The program is 12 months in length and 33 credit hours.

Contact Information

Program Director
Department of Physical Therapy
School of Health and Rehabilitation Sciences
Bridgeside Point 1
100 Technology Drive Room 242
Pittsburgh, PA 15219
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Fax: 412-648-5970
E-mail: ptinfo@shrs.pitt.edu

Application Process

All applicants must:

- Apply online using the SHRS ApplyYourself application
Submit the application fee of $50 (US)
Submit an essay—a description of educational and long-term professional goals
Submit three letters of recommendation. These references can be from a college instructor/professor, academic advisor, supervisor or employer, etc. The letters should address the applicant's academic, professional and personal attributes and potential for successful graduate study
Submit official transcripts/marksheets from all colleges and universities attended.

Admission Requirements

For admission to full graduate status an applicant must demonstrate:

- A minimum grade point average (GPA) of 3.0 from their entry-level professional physical therapy program (equivalent GPA determined via credential evaluation)
- Evidence of potential for success in a graduate program that can be demonstrated through past work experiences, continuing education, and letters of recommendation

Admissions decisions will be based on an overall evaluation of all credentials submitted and the availability of space in the class.

Additional requirements for International Applicants:

Academic Credential Evaluation

- Evaluations are accepted from International Consultants of Delaware, Inc. (ICD), Educational Credential Evaluators, Inc. (ECE) or Joseph Silney & Associates, Inc. (JS&A)
- A course by course evaluation including a grade point average equivalent is required
- A final transcript/marksheet and diploma (degree certificate) showing completion of the undergraduate degree must be submitted prior to starting the program
- If an international student has earned an undergraduate or graduate degree in the United States, this evaluation is not required
- If you are a US Citizen who earned their degree outside the US an academic credential evaluation IS required
- We do not accept WES evaluations

English Language Proficiency Scores

The University of Pittsburgh will the following as verification of English language proficiency:

- TOEFL - minimum scores accepted are 80 ibt (internet based test) or 550 pbt (paper based test). TOEFL scores must be sent via ETS to the University of Pittsburgh, institution code 2927
- IELTS - minimum score accepted is Overall Band 6.5. IELTS scores must be mailed directly from the testing center to SHRS Office of Admissions, 4020 Forbes Tower, University of Pittsburgh, Pittsburgh, PA, 15260

Verification of English Language Proficiency is required unless the following apply:

- The applicant is a citizen of a country whose ONLY official language is English
- The applicant has completed a degree at a regionally accredited institution in the U.S.
- The applicant is not a citizen of a country whose official language is English but has completed a degree program at an institution outside of the U.S. where the language of instruction is English and where the official national language of the country in which the institution is located is English

For detailed information about these requirements and additional helpful information for international applicants please visit the International Applicants information on the SHRS website.

Note: Application can be submitted while undergraduate degree is in progress provided the applicant will be able to provide evidence of successful degree completion prior to starting the program.

Application deadline: March 1st. Applications submitted and/or completed after the deadline will be reviewed on a case by case basis. Please contact admissions@shrs.pitt.edu.

We encourage international student applications.

Program Requirements
Examination and Testing

Throughout the plan of study, a series of written and/or oral-practical examinations are integrated within the formal course work. These examinations are used to determine mastery of the core elements of the plan of study.

The written examination will cover the levels of "application and analysis" and "synthesis and analysis" so as to gauge the student's ability to utilize information in their clinical decision making.

The practical examinations will focus on the clinical application of therapeutic assessment and treatment techniques. Students will be expected to demonstrate appropriate patient handling, awareness of safety issues, application of technique, and decision-making rationale at the level of an advanced clinician.

Failure to meet any of the above requirements may result in the student not being recommended for graduation from the program.

Curriculum and Course Descriptions

Students in the MS in Health and Rehabilitation Sciences can choose from either a Musculoskeletal PT concentration or a Neuromuscular PT concentration. Upon completion of either one, students will be awarded a Master of Science (MS) degree in Health and Rehabilitation Sciences.

The MS in Health and Rehabilitation Sciences requires the minimum completion of 33 credits. A comprehensive examination sequence is required following completion of the core coursework in each of the separate concentrations. Students must maintain an overall 3.0 GPA in their required plan of studies in order to be considered a candidate for graduation.

Musculoskeletal Concentration Curriculum

Fall
- HRS 2314 - Fundamentals of Neuroscience for the Orthopedic Clinician, 4 credits
- HRS 2362 - Evidence Based Practice - Clinical Considerations for the Lower Extremity, 3 credits
- HRS 2372 - Advanced Clinical Practice, The Lower Quarter, 3 credits
- HRS 2907 - Clinical Investigations, 2 credit

Spring
- HRS 2307 - Falls & Balance Dysfunction: PT Management and Intervention, 3 credits
- HRS 2309 - Analysis Neuromusculoskeletal Signs/Symptoms in Clinical Decision Making, 3 credits
- HRS 2361 - Evidence Based Practice - Clinical Considerations for the Lumbo Pelvic Spine, 3 credits
- HRS 2373 - Advanced Clinical Practice: The Upper Quarter, 3 credits

Summer
- HRS 2308 - Clinical Practice Seminar, 2 credits
- HRS 2374 - Clinical Rounds and Case Presentations, 1 credit
- HRS 2380 - Evidence Based Practice - Clinical Considerations for the Cervical and Thoracic Spine, 3 credits
- HRS 2381 - Evidence Based Practice - Clinical Considerations for the Upper Extremity, 3 credits
- Comprehensive Exam Sequence

* 

Note that each course in the plan of study is offered only once during the academic year, therefore, any departure from completing a course in its planned sequence, (e.g. failure to receive a passing grade of "C" or better; leave of absence from program) will result in a one year delay in completing the course, the remaining program requirements, and the year of graduation.

Physical Therapy - Neuromuscular Physical Therapy Concentration, MS
This program is designed for the practicing physical therapy professional who has already earned an entry-level degree in physical therapy. This post-professional graduate plan of study enables physical therapists to improve their clinical knowledge and clinical skills through a specific program of advanced physical therapy practice and scholarship. The Master of Science in Health and Rehabilitation Science program offers a choice of concentrations in Physical Therapy: Musculoskeletal Physical Therapy and Neuromuscular Physical Therapy. This program is designed to provide advanced clinical skills in the areas of musculoskeletal and neuromuscular physical therapy. The program leads to a professional clinical degree at the post baccalaureate level. The program is 12 months in length and 33 credit hours.

Contact Information

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Pittsburgh, PA 15219
Phone: 412-383-8169
Fax: 412-648-5970
E-mail: ptinfo@shrs.pitt.edu

Application Process

All applicants must:

• Apply online using the SHRS ApplyYourself application;
• Submit the application fee of $50 (US);
• Submit an essay—a description of educational and long-term professional goals;
• Submit three letters of recommendation. These references can be from a college instructor/academic advisor, supervisor or employer, etc. The letters should address the applicant's academic, professional and personal attributes and potential for successful graduate study;
• Submit official transcripts/marksheets from all colleges and universities attended.

Admission Requirements

For admission to full graduate status an applicant must demonstrate:

• A minimum grade point average (GPA) of 3.0 from their entry-level professional physical therapy program (equivalent GPA determined via credential evaluation)
• Evidence of potential for success in a graduate program that can be demonstrated through past work experiences, continuing education, and letters of recommendation

Admissions decisions will be based on an overall evaluation of all credentials submitted and the availability of space in the class.

Additional requirements for International Applicants:

Academic Credential Evaluation

• Evaluations are accepted from International Consultants of Delaware, Inc. (ICD), Educational Credential Evaluators, Inc. (ECE) or Joseph Silney & Associates, Inc. (JS&A)
• A course by course evaluation including a grade point average equivalent is required
• A final transcript/marksheet and diploma (degree certificate) showing completion of the undergraduate degree must be submitted prior to starting the program
• If an international student has earned an undergraduate or graduate degree in the United States, this evaluation is not required
• If you are a US Citizen who earned their degree outside the US an academic credential evaluation IS required
• We do not accept WES evaluations

English Language Proficiency Scores

The University of Pittsburgh will the following as verification of English language proficiency:

674
TOEFL - minimum scores accepted are 80 ibt (internet based test) or 550 pbt (paper based test). TOEFL scores must be sent via ETS to the University of Pittsburgh, institution code 2927

IELTS - minimum score accepted is Overall Band 6.5. IELTS scores must be mailed directly from the testing center to SHRS Office of Admissions, 4020 Forbes Tower, University of Pittsburgh, Pittsburgh, PA, 15260

Verification of English Language Proficiency is required unless the following apply:

- The applicant is a citizen of a country whose ONLY official language is English
- The applicant has completed a degree at a regionally accredited institution in the U.S.
- The applicant is not a citizen of a country whose official language is English but has completed a degree program at an institution outside of the U.S. where the language of instruction is English and where the official national language of the country in which the institution is located is English

For detailed information about these requirements and additional helpful information for international applicants please visit the International Applicants information on the SHRS website.

Note: Application can be submitted while undergraduate degree is in progress provided the applicant will be able to provide evidence of successful degree completion prior to starting the program.

Application deadline: March 1st. Applications submitted and/or completed after the deadline will be reviewed on a case by case basis. Please contact admissions@shrs.pitt.edu.

We encourage international student applications.

Program Requirements

Examination and Testing

Throughout the plan of study, a series of written and/or oral-practical examinations are integrated within the formal course work. These examinations are used to determine mastery of the core elements of the plan of study.

The written examination will cover the levels of "application and analysis" and "synthesis and analysis" so as to gauge the student's ability to utilize information in their clinical decision making.

The practical examinations will focus on the clinical application of therapeutic assessment and treatment techniques. Students will be expected to demonstrate appropriate patient handling, awareness of safety issues, application of technique, and decision-making rationale at the level of an advanced clinician.

Failure to meet any of the above requirements may result in the student not being recommended for graduation from the program.

Curriculum and Course Descriptions

Students in the MS in Health and Rehabilitation Sciences can choose from either a Musculoskeletal PT concentration or a Neuromuscular PT concentration. Upon completion of either one, students will be awarded a Master of Science (MS) degree in Health and Rehabilitation Sciences. The MS in Health and Rehabilitation Sciences requires the minimum completion of 33 credits. A comprehensive examination sequence is required following completion of the core coursework in each of the separate concentrations. Students must maintain an overall 3.0 GPA in their required plan of studies in order to be considered a candidate for graduation.

Neuromuscular Concentration Curriculum

Fall

- HRS 2305 - Advanced Neuroscience, 4 credits
- HRS 2306 - Motor Learning and Control of Movement/Health Promotion, 3 credits
- HRS 2372 - Advanced Clinical Practice: The Lower Quarter, 3 credits
- HRS 2907- Clinical Investigations, 2 credits
Spring

- HRS 2307 - Falls & Balance Dysfunction: PT Management and Intervention, 3 credits
- HRS 2309 - Analysis Neuromusculoskeletal Signs/Symptoms in Clinical Decision Making, 3 credits
- HRS 2356 - Concepts and Principles Related to Sensorimotor Control, 3 credits
- HRS 2373 - Advanced Clinical Practice: The Upper Quarter, 3 credits

Summer

- HRS 2312 - Seminar in Neurologic PT, 2 credits
- HRS 2364 - Evidence Based Medical & Physical Therapy Interventions for Persons with Neuromuscular Disease, 3 credits
- HRS 2365 - Case Studies of Persons with Neuromuscular Disorders, 3 credits
- HRS 2374 - Clinical Rounds and Case Presentations, 1 credit
- Comprehensive Exam Sequence

* Note that each course in the plan of study is offered only once during the academic year, therefore, any departure from completing a course in its planned sequence, (e.g. failure to receive a passing grade of 'C' or better; leave of absence from program) will result in a one year delay in completing the course, the remaining program requirements, and the year of graduation.

Department of Rehabilitation Science and Technology

Master of Science in Clinical Rehabilitation and Mental Health Counseling & Master of Science Degree in Health and Rehabilitation Sciences with a Concentration in Rehabilitation Counseling

Contact Information

Michael McCue, PhD
Professor, Counseling Program Director
Department of Rehabilitation Sciences and Technology
5040 Forbes Tower
412-383-6589
Fax: 412-383-6597
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http://www.shrs.pitt.edu/people/michael-mccue

Program 1: Master of Science in Clinical Rehabilitation and Mental Health Counseling

http://www.shrs.pitt.edu/mscrmhc/

Overview

Clinical Rehabilitation and Mental Health Counseling is a program that blends the important concepts of rehabilitation and mental health counseling to provide a strong, cohesive training program for clinical and professional counselors. Clinical Rehabilitation and Mental Health Counselors are
uniquely qualified to work with individuals with disabilities, particularly those who are experiencing psychiatric disabilities or other mental and behavioral health concerns.

The mission of our program is to improve individual and community mental health and rehabilitation outcomes through the clinical education and training of outstanding professional counselors. Our program integrates counseling, clinical services, research, and advocacy with a strengths-based, empowerment focus.

This program prepares students for clinical practice in rehabilitation and mental health counseling. The two-year, 60-credit hour curriculum includes courses on foundations of rehabilitation and mental health counseling, human development across culture and the lifespan, individual, group, family and couples counseling, substance abuse, evidence based practice in counseling, crisis management, risk assessment and disaster preparedness, clinical assessment and diagnosis, case conceptualization and treatment planning, medical and psycho-social aspects of disability, case management, vocational and career development, job development and placement, and assistive technology. Individualized and group professional mentorship over a student's years of study is a hallmark of the program.

Graduates meet eligibility criteria for national certification in rehabilitation counseling (i.e., certified rehabilitation counselor, CRC), professional counseling (National Counselor Certification, NCC and satisfy the educational requirements for licensure as a professional counselor (LPC).

Prerequisites

The curriculum of study for clinical rehabilitation and mental health counseling relies upon having experienced a strong undergraduate education that has provided a sound foundation in knowledge, methods, and attitudes. Students must possess foundational knowledge of the concepts and terminology in medical, psychological, and sociological sciences on which to build the knowledge and skills of the rehabilitation and mental health counseling curriculum.

Students must have the ability to communicate in a clear, organized, and logical fashion with appropriate grammar, both verbally and in writing.

Admission is available on a full-time or part-time basis. Exceptions may be granted to outstanding students who do not meet all of the prerequisite requirements.

Admission Requirements

- Baccalaureate degree in psychology, human services, rehabilitation sciences, social sciences, or related field of study from an accredited post-secondary institution
- Minimum overall undergraduate GPA of 3.00.
- Applicants must demonstrate that they possess foundation knowledge of the concepts and terminology in medical, psychological, and sociological sciences on which to build the rehabilitation counseling curriculum. Students must have the ability to communicate in a clear, organized, and logical fashion with appropriate grammar, both verbally and in writing.

All applicants must:

- Complete the SHRS ApplyYourself online application
- Submit the $50 application fee (U.S.)
- Submit official transcripts from all colleges and universities attended
- Submit a minimum of three letters of recommendation - Preferably from individuals who have instructed you in academic settings and/or supervised research activities
- Submit a personal statement - Description of educational and long-term professional goals
- Curriculum Vitae or Resume
- Participate in an interview - Applicants may be required to complete a group interview with the counseling faculty as part of the application process. Face to face interviews are preferred but other means can be arranged if indicated.

This program requires that student's complete clinical internships at facilities external to the University, and such facilities may require a criminal background check, an Act 33/34 clearance, and a drug screen to determine whether the student is qualified to participate in the clinical internships. Additionally, in order to become licensed, many states will inquire as to whether the applicant has been convicted of a misdemeanor, a felony, or a felonious or illegal act associated with alcohol and/or substance abuse.
Program 2: Master of Sciences in Health and Rehabilitation Sciences with a Concentration in Rehabilitation Counseling

http://www.shrs.pitt.edu/msrc

Overview

The program curriculum is designed to permit the student to obtain the essential knowledge, skills, and attitudes necessary to function effective as a professional rehabilitation counselor. The curriculum includes courses on rehabilitation research, foundations of vocational rehabilitation, counseling services, medical, psychological and social aspects of disability, case management, vocational and career development, assessment, job development and placement, rehabilitation science and assistive technology, and disability studies.

Prerequisites

The curriculum of study for rehabilitation counseling is based upon having experienced a strong undergraduate education that has provided a sound foundation in knowledge, methods, and attitudes. Students must possess foundational knowledge of the concepts and terminology in medical, psychological, and sociological sciences on which to build the rehabilitation counseling curriculum.

Students must have the ability to communicate in a clear, organized, and logical fashion with appropriate grammar, both verbally and in writing.

Admission is available on a full-time or part-time basis. Provisional special status may be granted to outstanding students who do not meet all of the prerequisite requirements.

Admission Requirements

- Required credits/degrees: Completion of a baccalaureate degree from an accredited institution (no specific major) from a curriculum with a distribution of studies in psychology, counseling, and social sciences
- Required quality point average: 3.0

Prerequisite Courses

- Psychology, counseling, or human development, 6 credits
- Statistics, 3 credits
- English composition or technical writing, 3 credits

Application Requirements

All applicants must:

- Complete the SHRS ApplyYourself online application;
- Submit the application fee of $50 (U.S.);
- Submit an essay—a description of educational and long-term professional goals;
- The applicant should demonstrate knowledge of rehabilitation through previous work experiences, internships, field experiences, or volunteer work experiences;
- Submit three letters of reference, preferably from individuals who have instructed you in academic settings and/or supervised research activities. These letters should address the applicant's academic, professional, and personal attributes and potential for meaningful graduate study;
- Submit official transcripts from all colleges and universities you have attended;
- Additional requirements for international applicants.
Note: Application can be submitted when course requirements are in progress.

Please note this program requires that you complete clinical internships at facilities external to the University, and such facilities will or may require a criminal background check, an Act 33/34 clearance, and perhaps a drug screen to determine whether you are qualified to participate in the clinical internships. Additionally, in order to become licensed, many states will inquire as to whether the applicant has been convicted of a misdemeanor, a felony, or a felonious or illegal act associated with alcohol and/or substance abuse.

**Admission Requirements and Application Process**

http://www.shrs.pitt.edu/msrc/admission

The curriculum of study for rehabilitation counseling is based upon having experienced a strong undergraduate education that has provided a sound foundation in knowledge, methods, and attitudes.

Specific requirements for admission to rehabilitation counseling are:

1. A Baccalaureate degree. (No specific major is mandated; however, prerequisite study for post baccalaureate advanced education should include a well-rounded general education that includes a distribution of studies in psychology, counseling and social sciences) Computer literacy is essential.

2. Prerequisite coursework includes foundation courses in the following areas:
   - Psychology, counseling, or human development (2 courses)
   - Statistics or research design
   - English composition or Technical Writing

3. Students must possess foundation knowledge of the concepts and terminology in medical, psychological, and sociological sciences on which to build the rehabilitation counseling curriculum.

4. The applicant must have a minimum overall GPA of 3.00, and a 3.00 in the prerequisite courses

5. The applicant should demonstrate knowledge of rehabilitation through previous work experiences, internships or field experience, or volunteer work experience.

Applications are accepted on a rolling basis.

**Curriculum and Course Descriptions**


The program curriculum is designed to permit the student to obtain the essential knowledge, skills, and attitudes necessary to function effectively as a professional rehabilitation counselor.

**Master of Science Degree in Health and Rehabilitation Sciences with a Concentration in Rehabilitation Science and Technology (RST)**

**Contact Information**

Dan Ding, PhD
University of Pittsburgh
Human Engineering Research Laboratories (HERL)
6425 Penn Avenue, Suite 400
Pittsburgh, PA 15206
412-822-3684
E-mail: dad5@pitt.edu
http://www.shrs.pitt.edu/RST/
Admission Requirements and Application Process

https://www.shrs.pitt.edu/RST/MSRST.aspx?id=324

Required credits/degrees: Bachelor's degree

Required quality point average (QPA): 3.0

Other admission criteria: The applicant must demonstrate knowledge of rehabilitation science and technology through volunteer or work experience.

Prerequisites:

- Statistics- 3 credits
- English Composition- 3 credits
- Human Anatomy and Physiology- 3 credits
- College Physics- 3 credits

*prerequisite waivers are permitted, pending applicants can demonstrate proof of equivalent knowledge/experience

Application Procedures

Application Requirements

All applicants must:

- Complete the SHRS ApplyYourself online application;
- Submit the application fee of $50 (U.S.);
- Submit an essay-a description of educational and long-term professional goals;
- Submit three letters of reference, preferably from individuals who have instructed you in academic settings and/or supervised research activities. These letters should address the applicant's academic, professional, and personal attributes and potential for meaningful graduate study;
- Submit official transcripts from all colleges and universities you have attended;
- Additional requirements for international applicants.

Note: Application can be submitted when course requirements are in progress.

Please note this program requires that you complete clinical internships at facilities external to the University, and such facilities will or may require a criminal background check, an Act 33/34 clearance, and perhaps a drug screen to determine whether you are qualified to participate in the clinical internships. Additionally, in order to become licensed, many states will inquire as to whether the applicant has been convicted of a misdemeanor, a felony, or a felonious or illegal act associated with alcohol and/or substance abuse.

Master of Science Degree in Physician Assistant Studies

The Physician Assistant Degree program prepares students to become highly qualified physician assistants. The University of Pittsburgh graduates will go on to serve as tomorrow's leaders in patient centered care, education and professional service.

Physician Assistants (PAs) are health care professionals licensed to practice medicine with physician supervision. PAs practice primary and specialty patient care in medical and surgical settings throughout the United States and worldwide. In order to practice, Physician Assistants must graduate from an accredited educational program and become certified through an examination by the National Commission on Certification of Physician Assistants (NCCPA).

The University of Pittsburgh Physician Assistant Studies Program received Accreditation by the Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA) in March of 2012, following a site visit in September 2011. This program was awarded continuing
accreditation through March of 2018. Students are admitted into the program upon successful completion of: an undergraduate degree at an accredited institution and fulfillment of all prerequisites.

Contact Information

Marsha LaCovey, MS
Physician Assistant Studies
School of Health and Rehabilitation Sciences
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Pittsburgh, PA 15238
412-624-6719
Fax: 412-624-7934
E-mail: mlacovey@pitt.edu
Webpage: http://www.shrs.pitt.edu/pa

Admission Requirements/Application Process

https://www.shrs.pitt.edu/PA/PAProgram.aspx?id=755&nav=756

Applications are accepted through CASPA each year from mid April to November 1. Students are admitted each spring semester.

Master of Science in Prosthetics and Orthotics

Contact Information

Amy Donovan
Department of Rehabilitation Science and Technology
6425 Penn Ave., Ste. 401
Pittsburgh, PA 15206
412-383-6596
Fax: 412-624-6501
E-mail: adonovan@pitt.edu
http://www.shrs.pitt.edu/po/

Program Overview

Orthotics and Prosthetics is the evaluation, fabrication and custom fitting of artificial limbs and orthopedic braces. Orthopedic braces, or orthoses, are used to stabilize or unload joints, normalize motion and stresses on tissue, substitute for muscle weakness or paralysis, and assist in normal growth, development and function. Orthoses can be applied to the head, neck, trunk, or limbs. Artificial limbs, or prostheses, are used to replace missing limbs or portions of limbs, and to restore more normal function of the upper or lower extremities.

Orthotists and prosthetists work in a variety of settings, including private practice, hospitals, rehabilitation facilities, nursing homes, and home health settings. Orthotists and prosthetists are currently in high demand, and the demand is expected to increase in the future.

Orthotists and prosthetists are part of the health care team, and as such, work with physicians, therapists, and other health care professionals to provide the orthotic and prosthetic needs of patients. Orthotists and prosthetists are responsible for 1) performing a comprehensive assessment of the patient's orthotic/prosthetic needs, 2) creating a comprehensive orthotic/prosthetic treatment plan to meet the needs and goals of the patient, 3) performing the necessary procedures to deliver the appropriate orthotic/prosthetic services, which may include fabrication of the orthosis/prosthesis, 4) providing continuing patient care and periodic evaluation to assure/maintain/document optimal fit and function of the orthosis/prosthesis, 5)
participating in personal and professional development through continuing education, training, research and organizational affiliations, and 6) developing, implementing and/or monitoring policies and procedures regarding human, business, and organizational management.

The MSPO Program is five consecutive terms in length, including one summer term, and requires a total of 66 credits. It is designed to meet all standards for accreditation by the National Commission on Orthotic and Prosthetic Education (NCOPE) and for preparing students to complete residencies and take the American Board of Certification in Orthotics and Prosthetics examinations.

The curriculum includes clinical internships at various internship sites which are available in the Pittsburgh area and throughout the country. The first set of internships are integrated into the curriculum and are completed within the Pittsburgh area. During the last term of the Program, the student completes a more extensive internship, and the student may have to relocate out of the Pittsburgh area during this term. We can work with the student to set up additional internship sites for this final term if necessary.

Accreditation Status

The Master of Science Program in Prosthetics and Orthotics has been granted accreditation by the National Commission on Orthotic and Prosthetic Education (NCOPE). Our graduates are fully eligible for NCOPE residencies, and, upon successful completion of an NCOPE residency, they are fully eligible to take the certification examinations of the American Board for Certification in Orthotics, Prosthetics & Pedorthics (ABC).

Admission Requirements and Application Process

https://www.shrs.pitt.edu/RST/MSPO.aspx?id=681&SBP=4876

Prerequisite courses

1. Baccalaureate Degree. No specific major is mandated; however, the degree should include a well-rounded general education with a distribution of courses in the sciences, mathematics, psychology, social sciences, and humanities.

2. Prerequisite coursework includes foundation courses in the following areas:
   - Physics with lab 4 credits
   - Biology with lab 4 credits
   - Chemistry with lab 4 credits
   - General Psychology 3 credits
   - Mathematics (algebra or higher) 3 credits
   - Human anatomy 3 credits
   - Human physiology 3 credits
   - Statistics 3 credits

3. *These courses may not be taken in an online or e-learning setting. Candidates who apply to the program with the latter will be asked to retake said courses prior to enrolling in the program.

4. Recommended minimum overall grade point is a 3.0 grade-point average in all college-level courses and a 3.0 average in prerequisite courses. Applicants with less than a 3.0 but with other outstanding qualifications will be considered.

5. Demonstration of knowledge of the profession of orthotics and/or prosthetics through volunteer or work experience. We suggest 250 hour minimum of O&P shadowing to allow the practitioner plenty of time to write a recommendation.

6. Recommendations: (Three): At least one academic reference from a college instructor, and at least two references from a health-care professional (preferably a certified orthotist or prosthetist).

7. Essay describing background leading to the choice of this profession and long-term goals.

8. Completed Application form.
Applicants applying to the Prosthetics and Orthotics (MS) program will apply online using the Orthotics & Prosthetics Centralized Application Service, known as OPCAS, https://portal.opcas.org/ submit one copy of their official transcript, letters of recommendation, and other required information directly to OPCAS.

To be assured inclusion in the review process, applications should be completed by the date posted on the MSPO website (http://www.shrs.pitt.edu/po). Application information which must be submitted includes:

- Completed application form
- Official transcriptions of all college-level courses
- Letters of recommendation (three)
  - At least one from a college instructor
  - At least two from a health care professional (preferably a certified orthotist or prosthetist)
- Essay describing background leading to your choice of this profession and your long-term goals.
- Graduate Record Exam Scores (General GRE) (Institution Code 2927)
- Record of work, shadowing, or volunteer experience related to the profession of orthotics and prosthetics

Please note that the University of Pittsburgh's program requires that you complete clinical internships at facilities external to the University, and such facilities will or may require a criminal background check, an Act 33/34 clearance, and perhaps a drug screen to determine whether you are qualified to participate in the clinical internships. Additionally, in order to become licensed, many states will inquire as to whether the applicant has been convicted of a misdemeanor, a felony, or a felonious or illegal act associated with alcohol and/or substance abuse.

Admissions process, application deadline and prerequisites requirements are available on the Prosthetics and Orthotics webpage.

The School of Health and Rehabilitation Sciences does not require a supplemental application. It is the responsibility of the applicant to complete all admission requirements prior to enrollment.

**Tuition and Fees**

Tuition and Fee rates for the MSPO program can be found at the following websites:

**Tuition**

- Pennsylvania Residents: http://ir.pitt.edu/graduate-tuition/
- Out-of-State Students: http://ir.pitt.edu/historicalRates-Fees/20162017_pgh_grad_out_state.pdf

**University Fees:**

- http://ir.pitt.edu/graduate-tuition/

In addition to University Fees, some of the MSPO courses have lab fees associated with them. Current Fees are available on the Prosthetics and Orthotics webpage.

**Rehabilitation Science and Technology - Clinical Rehabilitation and Mental Health Counseling, MS in CRMHC**

Clinical Rehabilitation and Mental Health Counseling is a program that blends the important concepts of rehabilitation and mental health counseling to provide a strong, cohesive training program for clinical and professional counselors. Clinical Rehabilitation and Mental Health Counselors are
This program prepares students for clinical practice in rehabilitation and mental health counseling. The two-year, 60-credit hour curriculum includes courses on foundations of rehabilitation and mental health counseling, human development across culture and the lifespan, individual, group, family and couples counseling, substance abuse, evidence based practice in counseling, crisis management, risk assessment and disaster preparedness, clinical assessment and diagnosis, case conceptualization and treatment planning, medical and psycho-social aspects of disability, case management, vocational and career development, job development and placement, and assistive technology. Individualized and group professional mentorship over two years of study is a hallmark of the program.

This program prepares students to practice the profession of rehabilitation and mental health counseling. The two-year, 60-credit hour curriculum is accredited by the Council for Accreditation of Counseling and Related Education Programs (CACREP) through October 2023.

Graduates meet the education eligibility criteria for national certification in counseling (i.e., national certified counselor, NCC, or certified rehabilitation counselor, CRC) and the pre-clinical service and educational requirements for licensure as a professional counselor (LPC).

Requirements:

Curriculum and Course Descriptions

Fall Term - Year 1

- HRS 2731 - FOUNDATIONS OF REHABILITATION & MENTAL HEALTH COUNSELING
- HRS 2733 - COUNSELING SKILLS & TECHNIQUES
- HRS 2738 - DIAGNOSIS & TREATMENT OF COGNITIVE AND MENTAL HEALTH DISORDERS
- HRS 2742 - LEGAL, ETHICAL & PROFESSIONAL ISSUES IN COUNSELING
- HRS 2755 - CLINICAL COUNSELING MENTORSHIP

Spring Term - Year 1

- HRS 2734 - ADVANCED COUNSELING SKILLS AND TECHNIQUES
- HRS 2737 - CLINICAL, DIAGNOSTIC AND FUNCTIONAL ASSESSMENT IN COUNSELING
- HRS 2739 - GROUP COUNSELING
- HRS 2744 - EVIDENCE BASED PRACTICE IN COUNSELING
- HRS 2755 - CLINICAL COUNSELING MENTORSHIP

Summer Term - Year 1

- HRS 2746 - COUNSELING PRACTICUM

Fall Term - Year 2

- HRS 2715 - MEDICAL & PSYCHOLOGICAL ASPECTS OF DISABILITY
- HRS 2732 - HUMAN DEVELOPMENT, CULTURE, & DISABILITY ACROSS THE LIFESPAN
- HRS 2740 - CLINICAL APPLICATIONS IN COUNSELING
- HRS 2741 - CASE CONCEPTUALIZATION & TREATMENT PLANNING
- HRS 2750 - CLINICAL COUNSELING CAPSTONE

Spring Term - Year 2
Clinical Capstone Examination

All Counseling students are required to pass a clinical competency examination. The Clinical Counseling Capstone Exam requires student demonstration of knowledge and skills that reflect entry-level competencies of a rehabilitation and mental health counselor. Students are assessed on knowledge and skills accumulated through coursework and clinical experiences. The Capstone requires students to synthesize and apply advanced concepts into clinical practice.

The Capstone employs a clinical case study approach. Students are charged with researching and completing a written review on a client issue or population with the expectation of demonstrating expertise. Students are then provided a case study in their area of expertise to demonstrate their knowledge and skills. Students are expected to analyze and synthesize case materials for case conceptualization and then develop appropriate, realistic, and evidence-based intervention plans. Students are expected to apply appropriate counseling techniques included in their intervention plan via role-play simulations. Successful completion of the Capstone is needed for the student to demonstrate mastery of graduate study and to advance to the final phase of their graduate training - internship.

Rehabilitation Science and Technology - Physician Assistant Studies, MS

Program Requirements

Prerequisite course work

- Anatomy and Physiology, two semesters*
  - This requirement may be met by taking either one semester of Anatomy with lab and one semester of Physiology or two semesters of Anatomy & Physiology combined.
- Biology with lab designed for Science Majors, two semesters*
- Chemistry with lab designed for Science Majors, two semesters*
- English Composition/Writing, two semesters
- Microbiology with lab, one semester*
- Organic Chemistry with lab, one semester*
- Psychology, Introduction, one semester
- Psychology, Upper Level, one semester
- Statistics, one semester
- Medical Terminology, one semester, at least one college credit

*Prerequisite Science Courses cumulative GPA of 3.0 or higher is required

Other admission criteria

Successful completion of an undergraduate degree at an accredited institution
• A valid Healthcare Provider BLS course certification from AHA. CPR certification must be maintained throughout the two year program.
• Overall grade-point average (GPA) of 3.0 (based on a 4.0 scale) in all college-level course work and a minimum (GPA) of 3.0 (based on a 4.0 scale) in the prerequisite science courses marked above with an asterisk (*).
• Three letters of recommendation, one from a former college/university instructor and one from a supervisor of the required clinical experience.
• A minimum of 500 hours of hands-on patient care experience. The patient care experience must be direct, "hands-on" patient contact e.g., RN, EMT or paramedic, patient care attendant or nurse's aide, clinic assistant, Peace Corps volunteer or other cross-cultural health care experience, therapist, clinical research assistant, respiratory therapist/aide, medical assistant, PT/OT assistant.

The GRE is required for applicants seeking seats. The Program Code in CASPA is 0452.

All coursework, requirements, and degree must be completed by August 31st each year in order to be considered for a seat in the class that will begin the following January.

Although not required, the following will be considered when determining the applicant's candidacy score:

• Biochemistry with lab, one semester
• Advanced Biology Courses
• Calculus, one semester
• Nutrition, one semester
• Shadowing a PA

The program is two full years (six consecutive semesters) and classes start each January (spring semester). Applications will be considered until the class is filled. Students are highly encouraged to apply early. The program does not offer advanced standing. All courses within the curriculum are required. No credit is granted for pre-admission experiential learning. Only full-time students are admitted.

Interview Process

Applications for admission will be reviewed by the PA Program Admissions Committee. Candidates selected will be required to meet with the Admissions Committee. The University of Pittsburgh's PA program finds the personal interview to be a necessary and important component to the admission process. The faculty looks for such personal attributes as maturity, empathy, compassion, motivation, ability to communicate, cultural sensitivity, critical thinking skills and the potential to achieve career fulfillment within the PA role. Interviews will be conducted on campus to provide the candidate and faculty an opportunity to meet and discuss the program objectives, student's goals, rationale for choosing the PA profession and more specifically the program at the University of Pittsburgh.

Plan of Study

The Physician Assistant curriculum is comprised of a rigorous 24 month Master of Science Program. The goals and objectives of our program are guided by the criteria set forth in the Standards and Guidelines for an Accredited Educational Program for the Physician Assistant as established by ARC-PA. The first three semesters (12 months) are made up of classroom instruction. Course content is presented through traditional lecture, integrated instruction, case based and hands on skills labs. The clinical year is comprised of rotations in internal medicine, primary care, emergency medicine, general surgery, women's health, pediatrics, geriatrics and behavioral health. The curriculum is presented by practicing physician assistants, medical and surgical physicians and providers who have the expertise in their respective specialty.

Each course in the program is offered only once during the academic year, therefore, any departure from completing a course in its planned sequence (e.g. failure to receive a passing grade of ‘C’ or better; leave of absence from program) will result in the delay of completion of program requirements and graduation from the program.

Didactic Year 1:

Semester 1:
Course Credits

- PAS 2101 - INTRODUCTION TO THE PHYSICIAN ASSISTANT PROFESSION
- PAS 2102 - HUMAN ANATOMY
- PAS 2103 - MEDICAL PHYSIOLOGY
- PAS 2105 - HEALTH POLICY
- PAS 2106 - INTERPRETING AND EVALUATING THE MEDICAL LITERATURE
- PAS 2205 - PATHOPHYSIOLOGY

Semester Total Credits: 15

Semester 2:

Course Credits

- PAS 2104 - GENETIC AND MOLECULAR MECHANISMS OF HEALTH AND DISEASE
- PAS 2107 - PATIENT EDUCATION AND COUNSELING
- PAS 2201 - HISTORY TAKING AND PHYSICAL EXAMINATION 1
- PAS 2202 - CLINICAL MEDICINE 1
- PAS 2203 - DIAGNOSTIC & THERAPEUTIC PROCEDURES I IN MEDICINE 1
- PAS 2204 - PHARMACOLOGY 1

Semester Total Credits: 15

Semester 3:

Course Credits

- PAS 2301 - HISTORY TAKING AND PHYSICAL EXAMINATION 2
- PAS 2302 - CLINICAL MEDICINE 2
- PAS 2303 - DIAGNOSTIC AND THERAPEUTIC PROCEDURES IN MEDICINE 2
- PAS 2304 - PHARMACOLOGY 2
- PAS 2305 - HEALTH ISSUES ACROSS THE LIFESPAN
- PAS 2306 - FUNDAMENTALS OF SURGERY

Semester Total Credits: 15

Year 1 Total Credits: 45

Clinical Year 2:

Clinical Year 2

The schedules presented in Semesters 4, 5, and 6 are an example. The actual clinical schedule and order a student will complete the identified discipline specific rotation may vary.

Semester 4:

Course Credits
PAS 2701 - CLINICAL ROTATION 1  
PAS 2702 - CLINICAL ROTATION 2  
PAS 2703 - CLINICAL ROTATION 3

Semester Total Credits: 12

Semester 5:

Course Credits

- PAS 2704 - CLINICAL ROTATION 4  
- PAS 2705 - CLINICAL ROTATION 5  
- PAS 2706 - CLINICAL ROTATION 6

Semester Total Credits: 12

Semester 6:

Course Credits

- PAS 2707 - CLINICAL ROTATION 7  
- PAS 2708 - CLINICAL ROTATION 8  
- PAS 2709 - CLINICAL ROTATION 9  
- PAS 2712 - SUMMATIVE EVALUATION

Semester Total Credits: 13

Year 2 Total Credits: 37

Program Credits Total: 82

Certification

Graduates of the professional program are eligible to sit for the Physician Assistant National Certification Exam (PANCE) administered by the National Commission on Certification of the Physician Assistant (NCCPA). All States and the District of Columbia have legislation governing the qualifications or practice of physician assistants. All jurisdictions require physician assistants to pass the Physician Assistant National Certifying Examination. Only those successfully completing the examination may use the credential "Physician Assistant-Certified." To remain certified, PAs must complete 100 hours of continuing medical education every 2 years. Every 10 years, they must pass a recertification examination.

**Rehabilitation Science and Technology - Prosthetics & Orthotics Concentration, MS**

Program Requirements/Minimum Credits

Students enrolled in the MSPO Program are required to complete 65 credits to meet degree requirements. The curriculum meets all requirements for students to do NCOPE residencies and take the American Board of Certification in Prosthetics, Orthotics, and Pedorthics certification examinations. Specific courses include:
Fall term, year one

- HRS 2771 - FUNCTIONAL ANATOMY AND KINESIOLOGY
- HRS 2772 - PATHOLOGY IN ORTHOTICS AND PROSTHETICS
- HRS 2773 - INTRODUCTION TO MATERIALS, EQUIPMENT, AND FABRICATION
- HRS 2901 - INTRO TO RESEARCH METHODOLOGY
- HRS 2776 - PROFESSIONAL ISSUES IN PROSTHETICS AND ORTHOTICS
- HRS 2779 - PATIENT MANAGEMENT IN ORTHOTICS AND PROSTHETICS
- HRS 2774 - REHABILITATION BIOMECHANICS FOR THE HEALTH CARE PROFESSIONS

Spring term, year one

- HRS 2883 - TRANS-TIBIAL PROSTHETICS
- HRS 2785 - LOWER EXTREMITIY ORTHOTICS 1
- HRS 2727 - CAPSTONE FOR PROSTHETICS AND ORTHOTICS
- HRS 2775 - INTRODUCTION TO EVIDENCE-BASED PRACTICE IN ORTHOTICS AND PROSTHETICS
- HRS 2905 - ETHICAL ISSUES IN HEALTH CARE

Summer term, year one

- HRS 2786 - LOWER EXTREMITY ORTHOTICS 2
- HRS 2783 - SPINAL ORTHOTICS
- HRS 2921 - CLINICAL INTERNSHIP (4 hours/week) = 56 hours, 1 credit
- HRS 2885 - TRANS-FEMORAL PROSTHETICS

Fall term, year two

- HRS 2781 - UPPER EXTREMITY ORTHOTICS
- HRS 2881 - UPPER EXTREMITY PROSTHETICS
- HRS 2708 - INDIVIDUAL, SOCIAL, AND CULTURAL EXPERIENCE OF DISABILITY
- HRS 2903 - ISSUES IN THE HEALTH SYSTEM
- HRS 2704 - FUNDMS REHAB ENGR AND TECHN 1
- HRS 2921 - CLINICAL INTERNSHIP (4 hours/week) = 60 hours, 1 credit

Spring term, year two

- HRS 2921 - CLINICAL INTERNSHIP (280 hours)
- HRS 2926 - SCHOLARLY PAPER
- HRS 2777 - PRACTICE MANAGEMENT IN PROSTHETICS AND ORTHOTICS

Program Total = 65 credits

*Each course is offered only once during the academic year, therefore, any departure from completing a course in its planned sequence (for example: failure, for any reason, to satisfactorily complete a required course; an unresolved "G" or "Incomplete" grade) will result in a one year delay in completing the course, the remaining program requirements, and the year of graduation.
Comprehensive Exam

At the beginning of the final term of study, a comprehensive examination will be given, covering all aspects of the Program. Students will be required to pass this examination prior to graduation.

Thesis/Non-thesis Options

All MSPO students are required to complete at least a Capstone Project, under the direction of a faculty advisor and an additional faculty reader. However, as a substitute for the Capstone Project, the student may elect to complete a master's thesis, under the direction of a faculty advisor and thesis committee. Students electing to pursue the thesis option will complete 3 credits of Graduate Research Proposal (HRS 2924) in place of the 3 credit Capstone Project (HRS 2926) and will also complete 3 credits of Graduate Research (HRS 2925).

Rehabilitation Science and Technology - Rehabilitation Counseling Concentration, MS

Program Requirements

Students participate in the equivalent of full-time graduate study for two academic years (i.e., a minimum of 60 semester hours). The emphasis in rehabilitation counseling requires two practicum experiences (minimum of 100 field hours each) and an internship (minimum of 600 hours). One practicum is recommended in the area of counseling or job placement and the other in assistive technology. The internship must be in rehabilitation counseling.

Clinical Capstone Examination

All Counseling students are required to pass a clinical competency examination. The Clinical Capstone Exam focuses on student demonstration of knowledge and skills that reflect the competencies of the rehabilitation and mental health counselor. Students will be assessed on their knowledge and skills accumulated through coursework and clinical experiences. The course requires students to synthesize and apply advanced concepts into clinical practice.

The course implements a case study approach. Students are provided real and/or simulated clients to demonstrate their knowledge and skills. Students are expected to analyze and synthesize case materials for case conceptualization and then develop appropriate and realistic intervention plans. Students are expected to apply appropriate counseling techniques included in their intervention plan via role-play simulations. Successful completion is needed for the student to demonstrate mastery of graduate study.

Curriculum and Course Descriptions


The program curriculum is designed to permit the student to obtain the essential knowledge, skills, and attitudes necessary to function effectively as a professional rehabilitation counselor.

Rehabilitation Science and Technology - Rehabilitation Science and Technology (RST) Concentration, MS

Program Requirements/Minimum Credits

All students enrolled in the RST concentration are required to complete 44 credits to meet degree requirements. Students must complete a common set of core courses
Note:

The curriculum covers basic science, engineering principles, assistive technology, pathology, rehabilitation, and consumer advocacy.

Students must complete all core courses. Other units may be taken as electives to meet the required number of credits for graduation.

Thesis/Non-Thesis Options

Students in the rehabilitation science and technology program are encouraged to pursue graduate research by completing a master's thesis under the direction of a faculty advisor and thesis committee. However, a non-thesis option of a scholarly paper is also available.

RST students who choose the scholarly paper option may take about one year to complete the program. The scholarly paper may take the format of a literature review, program development, or other product as approved by members of the student's Scholarly Paper Committee.

Assistive Technology Certificate

The Department of Rehabilitation Science and Technology has developed an innovative program that prepares individuals to be well-versed in assistive technology, and able to either work directly with persons with disabilities or participate in a research environment related to assistive technology and rehabilitation.

Eligibility

To be eligible for admission into the certificate program, a student must:

- currently be enrolled in a Master of Science or PhD program in RST, physical or occupational therapy, communication science and disorders, or engineering program or
- possess an MS, PhD, or MD degree in an appropriate health-related or technology field.

Program Requirements

The certificate will be awarded upon completion of a Master's or higher degree and completion of 15 credits. The following courses are required:

- HRS 2704 - FUNDMS REHAB ENGR AND TECHN 1
- HRS 2705 - PRACT REHAB ENGR & ASSISTV TECHN
- HRS 2706 - INTRODUCTION TO REHABILITATION ENGINEERING DESIGNS
- HRS 2708 - INDIVIDUAL, SOCIAL, AND CULTURAL EXPERIENCE OF DISABILITY
- HRS 2715 - MEDICAL & PSYCHOLOGICAL ASPECTS OF DISABILITY
- HRS 2718 - PROJECT BASED TECHNOLOGY DESIGN
- HRS 2724 - ASSISTIVE TECHNOLOGY FUNDING AND POLICY
- HRS 2901 - INTRO TO RESEARCH METHODOLOGY
- HRS 2905 - ETHICAL ISSUES IN HEALTH CARE
- HRS 2921 - CLINICAL INTERNSHIP
- HRS 2748 - ASSISTIVE TECHNOLOGY PRACTICUM
And at least three credits must be completed from any combination of the following courses:

(or other courses if approved by the Chair of the Department of Rehabilitation Science and Technology)

- HRS 2709 - WHEELCHAIRS 1
- HRS 2711 - COMPUTER ACCESS
- HRS 2723 - ASSISTIVE TECHNOLOGY FOR HOME, SCHOOL, & WORK
- HRS 2724 - ASSISTIVE TECHNOLOGY FUNDING AND POLICY
- HRS 3705 - WHEELCHAIR BIOMECHANICS
- HRS 3702 - SOFT TISSUE BIOMECHANICS
- HRS 3710 - CLINICAL APPLICATIONS AND SEATING

**Disability Studies Certificate**

The School of Health and Rehabilitation Sciences offers a 15-credit certificate program in disability studies. This multidisciplinary field of inquiry examines how psychosocial and societal participation issues potentially affect the estimated 45 million people with disabilities.

**Eligibility**

Students enrolled in MS, PhD, or MD degree programs in health-related or technology fields and professionals working in a variety of fields (minimum of bachelor degree required) are eligible to apply for this certificate program. Admission is offered on a rolling basis.

**Program Requirements**

The certificate will be awarded upon completion of the following courses. These 15 credits can be taken over two or more semesters:

- HRS 2708 - INDIVIDUAL, SOCIAL, AND CULTURAL EXPERIENCE OF DISABILITY
- LAW 5339 - LAW OF DISABILITY DISCRIMINATION or
- HRS 2905 - ETHICAL ISSUES IN HEALTH CARE or
- HRS 2902 - TOPICS IN HEALTH CARE
- HRS 2475 - DISABILITY RELATIONS AND SERVICES INTERNSHIP

**Department of Sports Medicine and Nutrition**

Students who choose to pursue Pitt's Coordinated Master in Nutrition and Dietetics degree are ahead of the game! In 2024, all Registered Dietitian/Nutritionists (RDNs) entering the field will be required to have a masters level degree to enter the profession. The Masters curriculum is a combination of didactic coursework and supervised practice which includes required competencies and student elective courses affording graduates a strong foundation in medical nutrition therapy and eligibility to sit for the Registration Exam for Dietitians.

The Sports Medicine (SM) program focuses on enhancing the knowledge base in the prevention, assessment, treatment and rehabilitation of athletic injuries and illness. Athletic Trainers, other health care professionals and individuals interested in sports medicine will find the curriculum well-suited to meet their post-professional goals and objectives. Several graduate assistantships are available for applicants who are Certified Athletic Trainers.

The Wellness and Human Performance (WHP) program is designed for students seeking graduate training to develop knowledge and skills related to nutrition and exercise in maintaining and improving health and physical performance. Primary areas of focus pertain to education and training in sports nutrition, health and wellness coaching, and the use of nutrition and exercise for the prevention and management of obesity and related chronic diseases.
Coordinated Master in Nutrition and Dietetics, MS

Students who choose to pursue Pitt's Coordinated Master in Nutrition and Dietetics degree are ahead of the game! In 2024, all Registered Dietitian/Nutritionists (RDNs) entering the field will be required to have a master's level degree to enter the profession.

Beginning in Fall 2019, the department will offer an entry-level graduate program, the Coordinated Master in Nutrition and Dietetics (Coordinated MS), which will provide both the didactic and the experiential practice competencies to meet eligibility requirements for the National Registration Examination for Registered Dietitians/Nutritionists. Interested students will apply in the Spring Term of 2019 to begin the Coordinated MS as juniors in Fall 2019. For incoming Pitt freshmen, a guaranteed admit will be available to enable students to complete the BS/MS degree in 5 year by following the recommended course schedule.

For more information, please contact:

Deborah A. Hutcheson, DCN, RDN, LDN
Program Director, Coordinated Program in Nutrition and Dietetics
4036 Forbes Tower
412-383-6747
Fax: 412-383-6636
E-mail: dhutches@pitt.edu

The present Masters curriculum is a combination of didactic coursework and supervised practice which includes required competencies and student elective courses affording graduates a strong foundation in medical nutrition therapy and eligibility to sit for the Registration Exam for Dietitians.

About

The Coordinated Master in Nutrition and Dietetics program is a two-year Master of Science program housed within the Department of Sports Medicine and Nutrition.

<table>
<thead>
<tr>
<th>Program Summary</th>
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<tr>
<td>53 credits (full-time only)</td>
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<tr>
<td>2 years (4 terms)</td>
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<tr>
<td>Program starts fall term only</td>
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Preparation for a career in dietetics as an Registered Dietitian/Nutritionist (RDN) requires the following:

- completion of an approved 4-year college degree program (accredited by ACEND) such as our Pitt undergraduate program*
- completion of an accredited supervised practice experience (providing a minimum of 1200 hours)**
- successful performance on the national Registration Examination for Dietitians

No matter your professional goals in the Dietetics profession, this program offers an entry level advanced degree option to provide a competitive edge for today's health care environment. Upon successful completion of the Masters program graduates are eligible to take the national registration examination for Dietitians. Graduates passing the registration exam are eligible for licensure in Pennsylvania by the Board of Nursing. For licensing information please visit Instructions for Licensed Dietitian-Nutritionist (LDN) Applicants.
*Students applying to this program must have an ACEND-accredited nutrition undergraduate degree. Please see information on our Post-Baccalaureate Year for the Coordinated Master in Nutrition and Dietetics program if you have an undergraduate in another field or discipline.

**This program provides the 1200 hours of supervised practice required to become an RDN. The supervised practice sites are randomly assigned and public transportation is not available to all sites. All students should anticipate the necessity of having a car accessible to them for both years of the program. Please review the supervised practice information.

The Coordinated Master in Nutrition and Dietetics is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2190, Chicago, IL, 60606-6995, 800/877-1600 or 312/899-0040. For more information on becoming an RDN, visit www.eatright.org.

Program Requirements

Admissions Requirements/Application Process

Prerequisites:

- Foundations of Biology 1 with Lab, 4 credits
- Genetics or Foundations of Biology 2, 3 credits
- Human Physiology, 4 credits
- Introduction to Microbiology, 3 credits
- General Chemistry 1 with Lab, 4 credits
- General Chemistry 2 with Lab, 4 credits
- †Organic Chemistry 1, 3 credits
- †Organic Chemistry 2, 3 credits
- *Biochemistry, 3 credits
- Public Speaking, 3 credits
- Economics, 3 credits
- Introduction to Sociology, 3 credits
- Introduction to Psychology, 3 credits
- English Composition/Writing, 6 credits
- Algebra, 2-4 credits
- *Introduction to Nutrition, 3 credits
- Introduction to the Profession of Dietetics, 1 credit
- Social Cultural Determinants of Food Behavior, 3 credits
- Nutrition Assessment 1, 3 credits
- Nutrition Education and Counseling, 3 credits
- Macronutrient Metabolism, 3 credits
- Micronutrient Metabolism, 3 credits
- Food Science 1 with Lab, 4 credits
- Food Service Management, 3 credits
- Nutrition in the Life Cycle, 3 credits
- Nutrition Therapy 1, 3 credits
- Nutrition Therapy 2, 3 credits

*These courses need to have been completed within the past five years.

†CHEM 0350 (3 cr.) offered each Spring Term will satisfy the Organic Chemistry requirement. Students who do not take CHEM 0350 must take OCHEM 1 & 2 (6 cr.).

+Genetics is preferred; however, a Biology 2 course with a strong genetics component will fulfill the requirement.

Application Deadline:
March 15; however, we encourage students to apply prior to the deadline as the program will begin reviewing applications in January.

All applicants must:

- Complete the SHRS ApplyYourself online application;
- Submit a self-evaluation essay, discussing strengths, skills, and experiences that will contribute to success in the CMD Program and your professional goals as a registered dietitian;
- Submit resume demonstrating evidence of adequate exposure to the field of dietetics and an appreciation of the breadth, depth, and scope of practice. This can be accomplished through either volunteer or paid work experience in a nutrition and dietetics related settings; there is no minimum number of hours required;
- Submit three letters of recommendation: one from a registered dietitian, one from a supervisor in volunteer or work experience and one form a college professor. These letters should address the applicant's academic, professional and personal attributes and potential for meaningful graduate study. At least one letter should speak to your leadership experience and commitment to service;
- Submit official transcripts from all colleges and universities attended;
- Submit Graduate Record Exam (GRE) score to the University of Pittsburgh institution code 2927. Achieve minimum scores at the 50th percentile on the verbal and quantitative sections and a score of 3.5 or better on the analytical writing section of the Graduate Record Examination (GRE).

Applications can be submitted when course requirements are in progress.

Admission is for the fall term only.

International Applicants

International applicants who have not completed a Didactic Program in Dietetics (DPD) in the US please visit the Post Baccalaureate Year for the Coordinated Master in Nutrition and Dietetics.

Technical Standards

All candidates and graduates must possess the essential physical, cognitive, and behavioral abilities considered necessary for students admitted to this program to achieve the knowledge, skills, and competencies of an entry-level dietitian. Candidates with disabilities will be considered on a case by case basis. The following link provides detailed information on the technical standards.

Please note that this program requires students to complete portions of their education (e.g., supervised practice experiences) at facilities external to the University to meet requirements for graduation. Many of these external facilities require screening measures such as, but not limited to, criminal background check, child abuse clearance, health appraisal, fingerprint-based background check and/or drug test prior to placement at the facility. The results of these requirements may limit and potentially eliminate placement options for the student which can, in turn, result in an inability to meet graduation requirements. Additionally, conviction of a misdemeanor, felony, or felonious or illegal act abuse may prevent the student from becoming credentialed and/or licensed to practice in the field.

The University of Pittsburgh, as an educational institution and as an employer, values equality of opportunity, human dignity, and racial/ethnic and cultural diversity. Accordingly, the University prohibits and will not engage in discrimination or harassment on the basis of race, color, religion, national origin, ancestry, sex, age, marital status, familial status, sexual orientation, disability, or status as a disabled veteran or a veteran of the Vietnam era. Further, the University will continue to take affirmative steps to support and advance these values consistent with the University's mission. For information on University equal opportunity and affirmative action programs and complaint/grievance procedures, contact the Office of Affirmative Action, 901 William Pitt Union, University of Pittsburgh, Pittsburgh, PA 15260, 412-648-7860 or 412-648-7860 x5400.

The Coordinated Master in Nutrition and Dietetics is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (A.N.D.), (ACEND@eatright.org), phone (1-800-877-1600 or 1-800-877-1600 x5400), or mail (120 South Riverside Plaza, Suite 2190, Chicago, IL 60606-6995).

Registration

This graduate curriculum provides students with a Master of Science degree and the accredited supervised practice component. The MS program will offer supervised experiences in a variety of major health care and community settings including the renowned University of Pittsburgh Health Care System (UPMC). Upon successful completion of the MS program, graduates are eligible for the National Registration Examination for Dietitians.

Graduation Requirements
Graduation from the Coordinated Master in Nutrition and Dietetics requires completion of 53 credits as follows:

- 26 credit hours of core academic requirements.
- 20 credit hours of supervised practice. This will provide the minimum of 1200 hours of supervised practice as specified by ACEND.
- 7 credit hours of research requirements.

**Program Mission and Goals**

The mission of the Coordinated Master in Nutrition and Dietetics program is to prepare entry-level registered dietitians at the master's level with increased competence and advanced skills to better meet the needs of the complex evolving health care environment of today.

**The program goals are:**

1. To prepare registry-eligible master's degree graduates who will have attained both the competence required of all dietitians upon entry into practice and the additional entry-level competence in the emphasis area of Nutrition Therapy (NT).
2. To prepare graduates who will meet the needs of consumers in Western Pennsylvania and other regions of the country for entry-level master's prepared Registered Dietitians with additional entry-level competence in the emphasis area of nutrition therapy.

Program outcomes are available upon request.

**Curriculum**

The Coordinated Master in Nutrition and Dietetics is a two-year master of Science course of study requiring 53 credits including supervised practice.

**First Year**

**Fall Term**

- HRS 2008 - ENTREPRENEUR SKILLS FOR NUTRITION PROFESSIONALS
- HRS 2631 - NUTRITION ASSESSMENT 2
- HRS 2999 - INDEPENDENT STUDY
- HRS 2004 - PATHOPHYSIOLOGY ACROSS THE LIFE SPAN
- PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS

Total Credits: 15

**Spring Term**

- HRS 2633 - PROFESSIONAL TRENDS AND ISSUES
- HRS 2634 - FOOD SERVICE MANAGEMENT WITH LAB
- HRS 2625 - ADVANCED COUNSELING METHODS
- HRS 2901 - INTRO TO RESEARCH METHODOLOGY
- HRS 2640 - SUPERVISED PRACTICE: COMMUNITY NUTRITION

Total Credits: 14

**Second Year**

**Fall Term**

- HRS 2623 - ADVANCED MEDICAL NUTRITION THERAPY 1
- HRS 2600 - NUTRITION RESEARCH SEMINAR
- HRS 2641 - SUPERVISED PRACTICE: FOOD SERVICE MANAGEMENT
Total Credits: 12

Spring Term

- HRS 2624 - ADV MEDICAL NUTRITION THERAPY 2
- HRS 2643 - SUPERVISED PRACTICE: CLINICAL 2
- HRS 2644 - SUPERVISED PRACTICE: MANAGEMENT OF NUTRITION CARE
- HRS 2645 - SUPERVISED PRACTICE MANAGEMENT IN LONG-TERM CARE
- HRS 2638 - PRACTICAL APPLICATIONS OF MNT 2

Total Credits: 12

Total Program Credits: 53

* Courses may vary dependent on transfer courses accepted.

*Each course is offered only once during the academic year, therefore, any departure from completing a course in its planned sequence (for example: failure, for any reason, to satisfactorily complete a required course; an unresolved "G" or "Incomplete" grade) will result in a one year delay in completing the course, the remaining program requirements, and the year of graduation.

**Sports Medicine and Nutrition - Sports Medicine Concentration, MS**

The Sports Medicine (SM) program focuses on enhancing the knowledge base in the prevention, assessment, treatment and rehabilitation of athletic injuries and illness. Athletic Trainers, other health care professionals, and individuals interested in sports medicine will find the curriculum well-suited to meet their post-professional goals and objectives. Several graduate assistantships are available for applicants who are Certified Athletic Trainers.

For more information, please contact:

Katelyn Allison, PhD, ACSM EP-C
Co-Director, MS in Sports Medicine
Department of Sports Medicine and Nutrition
Neuromuscular Research Laboratory
Warrior Human Performance Research Center
3860 South Water Street
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E-mail: katelyn.allison@pitt.edu
http://www.nmrl.pitt.edu

Mary E. Murray, EdD, ATC
About

The Sports Medicine (SM) concentration leading to a Master of Science degree in Health and Rehabilitation Sciences is a two-year graduate program housed within the Department of Sports Medicine and Nutrition.

<table>
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<td>Program starts fall term only</td>
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Sports medicine is a multidisciplinary field that focuses on health care issues for athletes and physically active individuals. The SM program has a research focus and provides a core curriculum that is central to the pathokinesiology of joint injury and the principles by which restoration of joint function is accomplished. Graduates of the program seek appointments in both clinical and educational settings at colleges and universities, high schools and private sports medicine clinics. Individuals who have successfully completed our program include athletic trainers, physical therapists, bioengineers and exercise physiologists.

Graduate assistantships are available to applicants who are athletic trainers and include appointments at the University of Pittsburgh. The yearly assistantships include tuition remission and stipend.

Research

Students are provided with a research experience within the Neuromuscular Research Laboratory/Warrior Human Performance Research Center that focuses on issues central to clinical research in orthopedics and sports medicine. Research includes the use of electromyography, motion analysis, isokinetic dynamometry, physiological, proprioceptive, and balance assessment modalities for the purpose of defining and restoring function as well as optimizing performance in military personnel, injured athletes, and in physically active individuals. Monthly seminars provide students with access to the most current research and clinical developments related to patient care.

The NMRL boasts:

- 30 years of comprehensive, relevant sports medicine research as part of the University of Pittsburgh
- A 10-year history of Department of Defense (DoD) Human Performance Operation and Injury Prevention Research
- Unique understanding of DoD Human Performance Operation and Injury Prevention needs
- Multi-disciplinary, team-centric approaches to research
• Cutting-edge and innovative research capabilities

Admission Requirements:

All applicants must:

• Complete the SHRS ApplyYourself online application
• Submit the application fee of $50 (U.S.)
• Submit a self-evaluation essay addressing your purpose for applying to the program, your ability to successfully complete the program, and your goals (short and long term)
• Submit three letters of reference, preferably from individuals who have instructed you in academic settings and/or supervised research activities. These letters should address the applicant's academic, professional, clinical (as appropriate) and personal attributes; as well as potential for meaningful graduate study
• Submit official transcripts from all colleges/universities attended
• Additional requirements for international applicants can be found on the SHRS website

Application deadline is March 15.

Applicants (certified athletic trainers) applying for Assistantship must apply by January 15. There is a mandatory, on-campus, interview with program faculty to be considered for the assistantship. You will be contacted by the department to schedule if qualified.

Both MS and PhD students may be eligible for the following Scholarships

George I. Carson Graduate Fellowship of the University of Pittsburgh

Funds from the George I. Carson Graduate Fellowship are awarded to graduate students who are or were affiliated with an athletics program at the University of Pittsburgh as undergraduate and are or will be students at a University of Pittsburgh graduate or professional school. The recipients must be of high moral character, or outstanding undergraduate academic achievement, and demonstrate the potential for outstanding graduate study. Deadline for application will be approximately May 1 for the upcoming fall term and spring term. Students may apply for both the fall and the spring at the same time using the May deadline.

Sports Medicine Resource Fund

This graduate scholarship was created to help defray the cost of professional development activities. Eligible students are those individuals who have completed their undergraduate Athletic Training degree at the University of Pittsburgh and are now continuing their education at Pitt through the Master's in Sports Medicine Program. This $1000 scholarship can be used toward travel and attendance at a professional meeting.

Freddie H. Fu, MD Graduate Research Award

The award is named for and presented in honor of Freddie H. Fu, MD for continued support of research in the field of Sports Medicine. The purpose of this award is to encourage graduate research activity by recognizing exceptional student research projects and defraying some of the expenses associated with the student research. Up to three Graduate Student Awards will be presented. In addition, one Dissertation Award is available to a Doctoral Student. The number of awards presented each year will be contingent on the number of quality proposals submitted and monies available.

Francis J. George Scholarship Award

The Francis J. George Scholarship Award will be awarded to Doctoral students (clinical as well as educational) who have displayed the same passion and commitment to the profession of athletic training as Frank did throughout his career. The amount of the scholarship is $4000.00. Deadline: October 15.

American College of Sports Medicine

Provides research grants and scholarships from the endowments and funds listed below, the American College of Sports Medicine Foundation helps provide the additional support for the College in areas such as education, minority scholarships, Foundation Research Grants, and much more.

NATA Research and Education Foundation Graduate/Doctoral Scholarship
The National Athletic Trainers' Association provides a number of scholarships to eligible students on the basis of academic and clinical excellence as well as participation in campus and community activities that demonstrate qualities of leadership and service. Applicants must be student members of the NATA by November 1 of the year preceding submission of the application, be enrolled in an accredited curriculum program and intend to pursue the profession of athletic training as their means of livelihood and have a minimum GPA of 3.2 or higher. Completed applications must include a statement of support by a certified athletic trainer and verification of academic standing. The amount of each scholarship is $2300.00. Applications will be posted on the NATA website approximately September 1. Go to NATA Foundation for additional application information. Deadlines for portions of the application begin in January. Learn more about this scholarship.

NATA Research & Education Foundation Master's/Doctoral Research Grant
View more about this grant.

Financial Aid
Graduate assistantships are available to master's candidates who are athletic trainers and include appointments at the University of Pittsburgh. The yearly assistantships include tuition remission and stipend.

Academic Standards
An average of at least B (GPA=3.00) is required in all courses that make up the MS emphasis in sports medicine. A student who receives a grade lower than a B is required to retake the course according to School of Health and Rehabilitation Sciences policy.

Student Scholarship Appointment Standards
The Department of Sports Medicine and Nutrition, in accordance with the University of Pittsburgh and School of Health and Rehabilitation Sciences, defines a student scholarship as a teaching assistant, teaching fellow, graduate student assistant, or student employee trainee (TA/TS/GSA/SET). Although student scholarship appointments may not be made for more than one year, a student may be reappointed. While it is impossible to guarantee reappointments, most students making satisfactory progress toward a graduate degree and whose teaching or other service performance is satisfactory will receive at least one renewal of their appointment or an offer of other financial assistance. If it is impossible to offer renewal or other appointments, priority will be given to those with superior academic, teaching, and service qualifications.

The criteria for reappointment are the quality of assigned work and academic achievement. Unsatisfactory academic performance is a cumulative GPA below 3.00 or completion of fewer than 9 credits of graduate work per term. As such, students who have a cumulative GPA below 3.00 at the time of scholarship reappointment will not receive reappointment of their scholarship. This policy is in accordance with the University of Pittsburgh Policy Statement for Teaching Assistants, Teaching Fellows, and Graduate Student Assistants.

Program Requirements
The concentration in sports medicine requires a student to successfully complete a minimum of 36 credits and is available with a thesis and non-thesis option. Master's degree candidates must successfully defend a thesis research project or scholarly paper (non-thesis track) in the second year for completion of the program.

Curriculum and Course Descriptions

Sports Medicine Core (Required)

- HRS 2867 - PATHOKIN ORTHOPADIC/ATHL INJURIES
- HRS 2868 - SEMINAR IN SPORTS MEDICINE
- HRS 3896 - RESEARCH SEMINAR SPORTS MEDICINE
- HRS 2869 - ANATOMICAL BASIS SPORTS MEDICINE
- HRS 3898 - LAB TECHNIQUES SPORTS MEDICINE 1
- HRS 3897 - LAB TECHNIQUES SPORTS MEDICINE 2
- HRS 2908 - MUSCULOSKELETAL ASSESSMENT AND INJURY PREVENTION
- HRS 2017 - INJURY EPIDEMIOLOGY

Electives (Highly Recommended - Others Available)
Sports Medicine and Nutrition - Wellness and Human Performance, MS

The Advanced MS in HRS will focus on wellness and human performance for those students seeking graduate training to develop knowledge and skills related to nutrition and exercise in maintaining and improving health and physical performance. The Advanced Program will include the integration of course work, practical applications, and research pertaining to nutritional aspects of health, fitness, and athletic training/performances. This Advanced MS Program in HRS with a concentration in wellness and human performance will parallel the Advanced MS with a concentration in sports medicine and provide students with access to the sports medicine research facilities and faculty.

The Wellness and Human Performance (WHP) program is designed for students seeking graduate training to develop knowledge and skills related to nutrition and exercise in maintaining and improving health and physical performance. Primary areas of focus pertain to education and training in sports nutrition, health and wellness coaching, and the use of nutrition and exercise for the prevention and management of obesity and related chronic diseases.

For more information, please contact:

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http://www.shrs.pitt.edu/mswhp
About

The Wellness and Human Performance (WHP) concentration leading to a Master of Science degree in Health and Rehabilitation Sciences is a two-year graduate program housed within the Department of Sports Medicine and Nutrition.

<table>
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<tr>
<th>Program Summary</th>
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<tr>
<td>38 credits (full or part-time)</td>
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<tr>
<td>2 - 4 years (varies)</td>
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<tr>
<td>Program starts fall term only</td>
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The curriculum integrates coursework, research and practical application pertaining to nutritional aspects of health, fitness, and athletic training/performance.

Students will have access to the Department of Sports Medicine and Nutrition research facilities and faculty.

*Note: This program is NOT an avenue to acquire the RDN (registered dietitian/nutritionist) credential.*

Admission Requirements:

For admission to full, unrestricted status, the applicant must have completed an undergraduate degree program with an overall grade point average (GPA) of 3.0 or better (based on a 4.0 scale).

An applicant with a GPA of less than 3.0 in overall undergraduate and professional programs but with favorable professional credentials may be admitted on provisional status upon recommendation of the admissions committee.

Application Deadline: March 15.

Prerequisite Courses:

Students must have a bachelor's degree in any field and the following prerequisites or their equivalents in order to be eligible to apply:

- Physiology, 4 credits
- Introduction to Nutrition, 3 credits

Application Procedures:

All applicants must:

- Complete the SHRS ApplyYourself online application
- Submit the application fee of $50 (U.S.)
- Submit an essay—a description of professional and educational goals that are realistically attainable during enrollment in the graduate program
- Submit three letters of reference, preferably from individuals who have instructed you in academic settings and/or supervised research activities. These letters should address the applicant's academic, professional and personal attributes and potential for meaningful graduate study
- Submit official transcripts from all colleges/universities you have attended
- International Applicants are required to submit an Academic Credential Evaluation. View more information on the SHRS website
- A visit to the school for an interview may be required if requested by the Admissions Committee.

Note: Application can be submitted when course requirements are in progress
Program Requirements

This degree requires the completion of a minimum of 38 credits.

Core Requirements: 26 credits

- HRS 2004 - PATHOPHYSIOLOGY ACROSS THE LIFE SPAN
- HRS 2650 - EXERCISE PHYSIOLOGY
- HRS 2600 - NUTRITION RESEARCH SEMINAR
- HRS 2625 - ADVANCED COUNSELING METHODS
- HRS 2660 - ADVANCED HUMAN PERFORMANCE AND TESTING
- HRS 2627 - DIET & EXERCS CHRONC DISEASE MGT
- HRS 2628 - NUTRITION AND PERFORMANCE WITH LAB
- HRS 2629 - DIETARY SUPPLEMENTS FOR HEALTH AND PERFORMANCE
- HRS 2646 - INTRODUCTION TO FUNCTIONAL NUTRITION

Research: 6 Credits

- HRS 2901 - INTRO TO RESEARCH METHODOLOGY *
- PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS

Note:

* Required

Additional Requirements: 6 Credits

- HRS 2999 - INDEPENDENT STUDY
- Electives in a designated specialty area (3)

Rehabilitation Science Doctor of Philosophy (PhD)

Rehabilitation Science, PhD

Program Requirements

A minimum of 72 credits beyond the bachelor's degree level is needed for the PhD degree at the University of Pittsburgh. Some areas of focus within the PhD Program may require more than 72 credits. Up to 30 credits taken at the graduate level (2000 & 3000 level courses) toward a master's degree may be transferred. In all cases, at least 36 credits must be completed as a PhD student at the University of Pittsburgh. No undergraduate credits (1000 level courses) may be applied towards the doctoral degree. All transfer credits must be submitted to and approved by the Associate Dean of Graduate Studies. Please note, credits transferred from another institution may not be used to substitute for credits of courses required in the degree program. For example, credits transferred for a statistics course taken at another institution will not count toward the 9 credits of statistics required in the PhD program here at the University of Pittsburgh. The student will still need to take 9 credits of statistics at the University of Pittsburgh.

The overall form and content of each student's program is the responsibility of the Graduate Faculty of SHRS. To carry out this responsibility, each student has an Academic Advisor who, in consultation with the student, plans a program of study and research in accordance with SHRS guidelines.

Course and Competency Requirements
The following requirements apply to all PhD in Rehabilitation Science students:

HRS 3000 - **Doctoral Seminar: 4 credits**

**Core Areas**

There are two Core Areas which are required for all students in the PhD in the Rehabilitation Science Program - Methods of Inquiry for Rehabilitation Sciences and Core Concepts in Disability and Rehabilitation Sciences.

All students pursuing a Doctor of Philosophy in Rehabilitation Science degree will be required to demonstrate basic competency in designing and appraising research studies and to demonstrate basic competency in understanding the fundamentals of disability and rehabilitation sciences.

**CORE: Methods of Inquiry for Rehabilitation Sciences**

Upon completion of the courses, students will be able to design a research study to answer a specific research question, including the best design for the question asked, sampling, controls for bias or confounding, and basic statistical analysis. They will be able to critically appraise research and apply it to clinical practice.

**CORE: Core Concepts in Disability and Rehabilitation Sciences**

Upon completion of the modules, students will be able to describe and discuss core concepts in disability and rehabilitation sciences, and analyze and synthesize multiple perspectives on the current and future state-of-the science.

A grade of B or better for each term of the Methods of Inquiry for Rehabilitation Scientists Core and Core Concepts in Rehabilitation and Disability Core (2 terms, 2 credits)

- HRS 3002 - Methods of Inquiry I - 1 credit
- HRS 3003 - Core Concepts I - 2 credits
- HRS 3004 - Methods of Inquiry II - 1 credits
- HRS 3005 - Core Concepts II - 2 credits

**HRS 3001 - Dissertation Research: 18 credits**

Preliminary Examination for the Methods of Inquiry Core and the Core Concepts in Rehabilitation and Disability Core requires an unconditional PASS

Comprehensive Written and Oral Examinations in the content area of the dissertation requires an unconditional PASS

Content in the areas of research design and statistics: 9 credits

Participate in the teaching of at least one course

Successful completion of manuscript submission requirement

Manuscript Submission Requirements

Prior to scheduling the dissertation defense, each PhD student will demonstrate a minimum amount of experience in manuscript writing and submission by completing:

- 1 co-author manuscript accepted for publication
- 1 first author manuscript submitted and reviewed by a peer-reviewed journal
- Data-based manuscripts are strongly preferred.

Successful completion of grant application submission requirement

Grant Submission Requirement

Prior to scheduling the dissertation defense, each PhD student will demonstrate a minimum experience with grant writing and submission by completing one of the following:
• Submission and peer-review of a Doctoral Research or Research Fellowship Grant applications (Can be NIH or Private Foundations)
• Submission and peer-review of Pilot study grant applications (e.g., foundations, professional societies, the UPMC Rehab Institute Pilot Award)
• Completion of a grant writing course
• Submission of a provisional and non-provisional patent application
• Submission and peer-review of an SBIR like applications, or other options to secure funding for technology development (pitching an idea for commercial development, etc.)

Note: The peer-review may be internal or external peer review. A copy of the summary report from the review should be submitted with a copy of the grant application to Debby Keelan (dkeelan@pitt.edu) to be kept in the student's file.

Also, note: Submission to the $1,000.00 SHRS scholarship award will NOT qualify for satisfying the grant submission requirement. A new SHRS Doctoral Scholarship Award will be available fall term 2017, that will satisfy this requirement.

Successful defense of the dissertation research

Note: PhD students are required to maintain a 3.000 Cumulative GPA and receive a grade of C or better in all courses required by their program curriculum.

Students who receive a grade below a C in a required course must repeat that course and attain a grade of C or better to graduate. (Note: University regulations state that a student may repeat any course in which a grade of B- or lower is received if an authorization to repeat the course is given by the student's adviser/faculty.) Students will not be permitted to register for a course until they attain a C or better in its prerequisites. Failure to receive an acceptable grade after the second opportunity to complete a required course may result in the student being dismissed from the program and SHRS.

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School of Information Sciences

The School of Information Sciences (iSchool) is one of the nation's pioneering schools in the education of information professionals, with a rich history that reaches back more than 100 years. Throughout that century, the School has built and maintained a tradition of excellence and innovation in the Information Sciences. As one example, our Master of Library and Information Science degree is ranked tenth in the nation by U.S. News & World Report. This School, with a national and international reputation for quality, will prepare students for careers in the information, telecommunications, archival and library professions.

The School of Information Sciences offers programs of study leading to masters' and doctoral degrees, as well as certificates of advanced study (post-bachelor's and post-master's). The iSchool is composed of the Information Science and Technology Program, the Library and Information Science Program, and the Telecommunications and Networking Program. Degrees and certificates offered by each are outlined under the individual program headings. The iSchool's faculty, staff, students and programs—uniquely interdisciplinary, multicultural, and international by design—are dedicated to building a global society and an informed citizenship based upon access to reliable and useful information.

Grandparenting and the new School of Computing and Information

School of Information Science (SIS) students who matriculated into the University of Pittsburgh PRIOR to Fall 2017 received a communication allowing a choice to either remain in SIS or transfer to the new School of Computing and Information for completion of their degree.

- If a student chose to remain in the School of Information Sciences, they should refer to these catalog pages for the regulations, policies, and requirements for their degree.
- If a student applied to transfer to the School of Computing and Information, they should refer to the School of Computing and Information catalog pages for the regulations, policies, and requirements for their degree.

Please note: If a student took no action in response to the grandparenting e-mail, they were transferred to the School of Computing and Information by default.

Any student matriculating into the University of Pittsburgh AFTER Fall 2017, must apply to the School of Computing and Information in order to pursue an undergraduate degree in either Computer Science or Information Science and should refer to this School of Computing and Information catalog pages for information.

Mission of the School of Information Sciences

The Mission of the School of Information Sciences is to support and advance the broader education, research, and service mission of the University by educating students, furthering knowledge, and contributing our expertise to advance humankind's progress through information.

This mission is achieved through specific actions:

- Offering superior graduate programs in Library and Information Science, Information Science, and Telecommunications
- Engaging in research and scholarly activities that advance learning through the extension of the frontiers of knowledge and creative endeavors
- Cooperating with industry and government to transfer knowledge
- Extending our expertise to local communities and public agencies to contribute to social, intellectual, and economic development in Pennsylvania, the nation, and the world. In addition, the School works with industry, government, and local communities to provide unique opportunities for students and to advance the fields within the Information Sciences.

Goals of the iSchool

The goals of the School of Information Sciences are to:
Promote excellence in education at the master's and doctoral levels in the information sciences.

Advance knowledge in the Information Sciences as an internationally-recognized center for high-quality, innovative, and leading edge research.

Provide strong professional, technical, and policy leadership by the faculty at the local, state, national and international levels.

Promote recognition of the School of Information Sciences for its production of seminal research, curricular leadership, superior professional and PhD students, and service to professional and regional communities.

Foster intellectual vitality in the iSchool community.

Major and Degree Options

The School of Information Sciences offers the following graduate degrees:

- Master of Science in Information Science (MSIS)
- Master of Science in Telecommunications (MST)
- Master of Library and Information Science (MLIS)
  - On-campus program
  - MLIS Pitt Online (web-based)
- Doctor of Philosophy in Information Science (PhD)
- Doctor of Philosophy in Information Science with a Focus in Telecommunications (PhD)
- Information Science with a Focus in Telecommunications
- Doctor of Philosophy in Library and Information Science (PhD)
- Certificate of Advanced Study (post-bachelor's and post master's in Information Sciences and Telecommunications (CAS)
- Certificates of Advanced Study (post-master's) in Telecommunications

The iSchool also has a joint agreement with the Graduate School of Public and International Affairs (GSPIA), allowing students to complete the MSIS degree and one of three degrees in GSPIA simultaneously. The course of study for the MSIS degree under the joint agreement consists of a minimum of 30 credits in graduate Information Science and Technology courses, plus an additional 30-39 credits at GSPIA depending on the selected area of study. To be admitted fully into the joint program, students must be accepted by both GSPIA and the Master of Information Science Program. More information is available at www.ischool.pitt.edu/ist/degrees/joint-degree-programs.php

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Admissions Information

Note: Prospective students interested in enrollment in one of our degree programs for Fall 2017 or later, must refer to the School of Computing and Information. See the grandparenting section for details.

The School of Information Sciences seeks students with diverse interests and abilities for its graduate degree and certification programs. All applicants will be judged on their own merits. Applicants for master's study must have earned a bachelor's degree from an accredited college or university with a scholastic average of B (3.0 on a 4.0 scale) or better; the doctoral programs have more stringent requirements. For those who have
been in the workforce, admission will be based upon academic achievement, area of study, career orientation, and work experience. Each program has specific prerequisites for admission—see links at the bottom of the page for details specific to each degree.

Please note that there may be different language requirements for specific programs. The general requirements are as follows: a minimum score of 550 (paper-based), or 80 (Internet-based) on the TOEFL is required for admission to graduate study in this program. The requirement to take the TOEFL may be waived if the applicant has received a degree from an accredited institution in the United States.

Prior to registration, students with TOEFL scores less than 600 (paper) or 100 (Internet-based) will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study.

Students may choose to take the International English Language Testing System exam (IELTS) in place of the TOEFL. Students must receive a score of Band 6.5. Students who do not achieve a score of Band 7.0 score or better will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study. Other admission requirements vary depending upon the chosen program.

**Application Fee**

Submission of an application fee as determined by the School of Information Sciences is required of all applicants. This fee is non-refundable.

**Financial Assistance**

The School of Information Sciences provides a limited amount of financial assistance to highly qualified, full-time graduate students. Please note that financial assistance provided by the iSchool differs from financial aid provided by the University, government, or other private organization.

Financial assistance is awarded each term. Student assistantships are available only to full-time students (full-time is defined as a minimum of 9 credits and a maximum of 15 credits per term). Decisions are contingent upon availability of funds and satisfactory academic performance during completed terms.

Financial assistance priority is given to U.S. citizens in evaluating financial assistance applications. All international students are expected to come fully funded for the entirety of their degree, advanced study certificate or additional program of study. International students may be granted financial aid in such exceptional circumstances as the awarding of a Graduate Student Research Assistantship for a funded project.

**Academic Standards**

The following section details school-specific academic rules and regulations. These are in addition to the University-wide rules detailed under General Academic Regulations.

**Academic Integrity**

A student has an obligation to exhibit honesty, and to respect the ethical standards of the information professions in carrying out his or her academic assignments. All students are responsible for adhering to policies on academic integrity, which are available on the school's Intranet.

**Transfer of Credits**

A maximum of 6 graduate credits earned with a grade of B or better may be transferred toward either the Master's or PhD degree from institutions fully accredited for graduate study, provided that these credits have not been applied to any other degree or certificate, that they are applicable to the students' program of study, and that they are not older than the statute of limitations for the degree. Approval of transfer credits is determined by the faculty via a petition submitted by the student during their first term of study. Detailed instructions and forms are available on the school's Intranet.
Satisfactory/No-Credit (S/NC) Grading System (formerly the S/N option)

In addition to the standard University letter grade system, the Satisfactory/No-Credit (S/NC) option (formerly the S/N option) is offered at the master's level for a limited number of courses. Under this option, a student who does satisfactory work receives the grade of S. If the student's work is unsatisfactory, an NC is assigned. Courses for which an S is received are counted toward graduation but are not utilized in computing the GPA. A limit of 6 credits of Satisfactory (S) grades may be applied at the master's level. Doctoral programs may have more stringent requirements.

Advising

Academic advising provides the foundation upon which students plan their studies. It is the policy of the School for each student to have an official advisor whose responsibilities include providing guidance in developing the student's career goals and academic programs, approving course selections, and advising as needed on issues affecting the student's academic and professional careers. The goal of academic advising is to develop a consistent academic program coordinated to meet general program requirements and specific needs of individual students. Ideally, the student and faculty advisor function as a team working toward the objective of career preparation by means of the strongest possible academic experiences for the student. Students are matched with an advisor upon admission; they may, however, change advisors at any time. Students should meet each term with their advisors to ensure timely progress through their program.

Special Academic Opportunities/Programs

In addition to the degree offered, the School of Information Sciences offers other academic opportunities and programming to its students:

Colloquiums

Throughout the year, nationally and internationally recognized speakers from the information professions present research colloquiums, which are open to all faculty and students at the iSchool. Colloquiums further enrich the iSchool's educational programs.

Student Organizations

The School encourages students to become members of-and to participate actively in-the student chapters of several professional associations: Student Chapter of the American Library Association (SCALA), American Society for Information Science and Technology (ASIS&T), Special Libraries Association (SLA), and the Society of American Archivists (SAA). The iSchool cooperates with local chapters and special divisions of these organizations and other professional associations, such as the Institute of Electrical and Electronics Engineers (IEEE), the Association for Computing Machinery (ACM), and the Data Processing Management Association (DPMA), in promoting meaningful programs of interaction with practicing professionals.

Alumni Association

The alumni of the School meet each year at professional associations, assist with recruitment efforts, and offer career/skill development opportunities. For more information, please visit www.ischool.pitt.edu/alumni.

Beta Phi Mu

Graduates who achieve a grade point average of at least 3.75 on a 4.0 scale in their work for the MLIS degree and are nominated by a member of the faculty are eligible for election to membership.
Program and Course Offerings

Department of Information Science and Technology

Information Science and Technology

The School of Information Sciences (iSchool) offers a Master of Science in Information Science (MSIS) and a PhD in Information Science. In addition, the iSchool offers Certificates of Advanced Study in Information Science to post-bachelor's and post-master's level students who wish to continue their education. Students may also pursue a joint degree between the iSchool and the Graduate School of Public and International Affairs.

Research Focus

Members of the faculty are active researchers with funding from governmental and/or corporate sources. Both master's and doctoral students have an opportunity to work with faculty on research projects, and doctoral students conduct independent research for their dissertations. Some major areas of research interest are systems analysis and design, information retrieval, database and networking, human-centered computing, social computing, intelligent systems, geoinformatics security assured information systems, big data analytics, and cognitive science.

Contact Information

Information Science Program
School of Information Sciences
135 North Bellefield Avenue
412-624-3988 or 800-672-9435
Fax: 412-624-5231
E-mail: isinq@sis.pitt.edu
www.ischool.pitt.edu/ist

The MSIS Degree

Connecting people, information, and technology is the mission of the School of Information Sciences. The Master of Science in Information Science (MSIS) degree builds on that mission by preparing students for careers as information professionals, including systems analysts and designers, database developers and managers, information security experts, and more. This 36-credit program can be completed in three semesters (depending upon course schedules) of full-time study or as many as four years of part-time study. For more details about this program, please visit www.ischool.pitt.edu/ist/degrees/msis-program.php.

Our Curriculum

The curriculum has been designed to provide our students with a rigorous program that is also flexible, so that the specific needs of individual students can be met. The MSIS Program offers several options to carefully target your studies. For those not ready to specialize, the School allows you to design a course of study under the direction of your advisor that meets your individual needs, while conforming to the general distribution guidelines found in the MSIS Plan of Study. Many students use this option to sample multiple areas of the curriculum, such as cognitive systems, human-centered computing, systems design and implementation, networks and security, and database management. The program has developed a series of specializations, in consultation with industry, that ensure that students have the critical expertise in specific areas in high demand by employers. Specializations are described here.

Admissions
Applicants for graduate study must have earned a bachelor's degree from an accredited college or university with a scholastic average of B (3.0 on a 4.0 scale) or better. The program seeks students with diverse interests and abilities; an undergraduate computer science major is not a prerequisite. Although many successful students have entered the program with a background in mathematics, engineering, or computer science, many other outstanding students entered with undergraduate degrees in business, music, history, philosophy, or chemistry.

Prerequisites

Prerequisites for admission to the Master of Science in Information Science (MSIS) program include one 3-credit college course in each of the following:

- A structured programming language
- Statistics
- Mathematics-discrete mathematics or calculus

Students who lack some of the prerequisite courses may be admitted provisionally pending completion of the prerequisites during the first 12 credits of study. Any coursework that the student is asked to meet as a condition of their admission must be completed with a grade of B or better.

Graduate Record Examination (GRE)

All Master of Science in Information Science (MSIS) applicants are required to submit a recent score (within three years of the date of application) on the Graduate Record Examination as part of their admission credentials. Scores on all three sections (verbal, quantitative, and analytical) of the General Section should be submitted. While submission of the GRE scores are preferred, a recent and strong performance on the GMAT will be accepted in lieu of taking the GRE exam. The University code for the GRE is 2927. The program code is 0404.

International Applicants

There are different documentation requirements for international students. They are described here.

English Language Proficiency

Graduate students must possess sufficient knowledge of English in order to study, to understand lectures, and to participate successfully in class discussion without being hindered by language. The Test of English as a Foreign Language (TOEFL) must be taken if the applicant's native language is not English. The institution code for the University of Pittsburgh is 2927 and the department code is 90.

A minimum score of 550 (paper-based), or 80 (Internet-based) on the TOEFL is required for admission to graduate study in this program. The requirement to take the TOEFL may be waived if the applicant has received a degree from an accredited institution in the United States.

Prior to registration, students with TOEFL scores less than 600 (paper) or 100 (Internet-based) will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study.

Students may choose to take the International English Language Testing System exam (IELTS) in place of the TOEFL. Students must receive a score of Band 6.5. Students who do not achieve a score of Band 7.0 score or better will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study. Other admission requirements vary depending upon the chosen program.

Application Fee

Submission of an application fee as determined by the School of Information Sciences is required of all applicants. This fee is non-refundable.
Deadlines

Admissions occur on a rolling basis throughout the year. See the iSchool's Web site for Application Deadlines.

School-Based Financial Assistance

The Graduate Information Science and Technology Program awards School-based financial support on the basis of qualification to full-time graduate students with full admission status (all prerequisites completed). Please visit www.ischool.pitt.edu/ist/degrees/financial-aid.php for the most current information.

Academic Advising

Each student is assigned an academic advisor at the time of admission to graduate study. These assignments are made primarily on the basis of the student's background and interests as shown in the application. The student may at any time elect to change advisors—any such change requires the consent of the new advisor and must be reported to the program. Forms for changing advisors are available at the school's administrative offices, Fifth Floor, IS Building.

At the time of initial registration, the student is encouraged to fill out a Plan of Study and discuss it with their advisor. The Plan of Study forms are available here. A Plan of Study is a series of courses designed to meet the minimum exit competencies judged by the faculty to be necessary for employment as an information professional. All Plans of Study must have the approval of the advisor and will be used to ensure that the student has met all requirements for graduation.

Statute of Limitations

The master's degree must be completed within four years of the first term in which courses were taken after admission. The normal full-time course load is 9 to 12 credits per term; thus, a full-time student will complete the program in three or four terms. The normal part-time course load is 6 credits per term, which permits the part-time student to complete the program in six terms. The faculty, in response to a student petition, may approve exceptions to the four-year limit if extenuating circumstances exist.

Registration and Residence Requirements

To maintain active student status, students must register for at least 3 credits during one of the three terms of the calendar year. It is recommended, however, that part-time students register for at least 6 credits during two of the three terms of the academic year to maintain reasonable progress through the program. In addition, international students are responsible for meeting the registration requirements dictated by their visa.

The PhD in Information Science Degree

The Doctor of Philosophy degree provides research-oriented graduate study and professional specialization in the science of information. The candidate must give evidence of superior scholarship, mastery of a specialized field of knowledge, and demonstration of ability to do significant and relevant research. Students interested in the PhD degree should consult this Web site.

The candidate for the PhD program should also have a broad knowledge of the field as a profession as well as a specialization in an area of major interest. Every candidate should possess a strong background in the foundations of information science and research methodologies.

The advisor and student should design a Plan of Study at the time of registration.

The iSchool also offers a Doctor of Philosophy degree in Information Science with a focus in Telecommunications. Details are available at www.bulletins.pitt.edu/graduate/tele.htm.
Residence Requirement

Full-time residency, in addition to requiring full-time study, affords the student the opportunity for daily professional interaction with faculty and other PhD students. This interaction is a major component in the student's preparation for research. Despite the benefits that full-time residency affords, it is recognized that students may have off-campus responsibilities as well.

The PhD degree, therefore, can be completed by a combination of full-time and part-time study. Two terms of full-time study are required. Full-time is defined as nine or more graduate credits per term. All students, whether on campus or away, must maintain active status by registering according to the requirements stated below. No matter their status, they must meet with their advisor at least once per year. Students will submit an annual progress report to the PhD Program Chair, the Program Secretary and the advisor. This will take place on the second Friday of January.

Registration Requirement

Students must register each term for the number of credits of course work, independent study, or research equivalent to the anticipated use of faculty time and University facilities. A student who has not registered for a least one credit during a 12-month period will be transferred automatically to inactive status and must file an application for readmission to graduate study (and pay the application fee) before being permitted to register again. Upon readmission, the student is required to adjust the program of studies to meet current PhD program, school, and University requirements.

In keeping with University policy, all graduate students must be enrolled for a minimum of 1 credit in the term in which they graduate.

Doctoral students who have completed all credit requirements for the PhD degree, including minimum dissertation credit requirements, and are working full time on their dissertation, are encouraged to register for "Full-time Dissertation Study," with a fixed fee registration per term, currently $500 plus fees. (Enrollment in this course fulfills the University requirements for registration in the term of graduation.)

Please note that international students may be required to register for credits beyond the minimums stated above, as they are also responsible for meeting the registration requirements dictated by their immigration visa.

PhD Statute of Limitations

All requirements for the PhD degree in IS must be completed in not more than six calendar years from the time of first registration. Students may in extenuating circumstances submit a formal request for extension of their statute of limitation or for a leave of absence from the program. The request must be submitted to the advisor and then presented to the Faculty Committee on Doctoral Studies for a decision.

Admission Requirements

Applicants for admission to the PhD program are required to have earned a master's degree from an accredited university and should have a grade point average (GPA) of 3.3 or better (on a 4.0 scale) for any graduate studies they have pursued.

Students must submit at least three references from persons in the professional and academic communities. The PhD Admissions Committee may, on occasion, require additional references.

Applications will not be considered without the submission of the iSchool's application fee.

As evidence of their ability to undertake doctoral work students must submit an essay (not to exceed 1,000 words) indicating, as specifically as possible, the student's academic and professional goals in relation to the Information Science and Technology doctoral program, and identify potential areas and/or topics in which the student expects to pursue dissertation research. This essay is a critical component of the admissions process, and will be used in assigning the student's initial program advisor.

PhD applicants must either have or demonstrate the following prerequisite knowledge. These courses (or their equivalents) should be taken before seeking admission, but may be taken during the first four terms of study. All courses must be at the graduate level and may have been taken while pursing another graduate degree:

- Statistics or Discrete Math (e.g., IS 2060 Statistics or IS 2020 Mathematical Foundations)
• Cognitive Psychology (e.g., IS 2300 Human Info Processing or IS 2350 Human Factors)
• Systems Analysis and Design (e.g., IS 2510 Information Systems)
• Data Structures (e.g., IS 2500 Data Structures)
• Database Management (e.g., IS 2710 Database Management)

All applicants must submit scores from a predictor test (if not taken previously) such as the Graduate Record Examination (GRE) or equivalent examination. Scores on all three sections (verbal, qualitative, and analytical) of the GRE must be submitted.

International Applicants

There are different documentation requirements for international students. They are described here.

English Language Proficiency

Graduate students must possess sufficient knowledge of English in order to study, to understand lectures, and to participate successfully in class discussion without being hindered by language. The Test of English as a Foreign Language (TOEFL) must be taken if the applicant's native language is not English. The institution code for the University of Pittsburgh is 2927 and the department code is 90.

A minimum score of 550 (paper-based), or 80 (Internet-based) on the TOEFL is required for admission to graduate study in this program. The requirement to take the TOEFL may be waived if the applicant has received a degree from an accredited institution in the United States.

Prior to registration, students with TOEFL scores less than 600 (paper) or 100 (Internet-based) will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study.

Students may choose to take the International English Language Testing System exam (IELTS) in place of the TOEFL. Students must receive a score of Band 6.5. Students who do not achieve a score of Band 7.0 score or better will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study. Other admission requirements vary depending upon the chosen program.

Application Fee

Submission of an application fee as determined by the School of Information Sciences is required of all applicants. This fee is non-refundable.

Library and Information Science Program

The School of Information Sciences (iSchool) offers a Library of Information Science (LIS) program, which consists of the Master of Library and Information Science degree (MLIS) and the Doctor of Philosophy in Library and Information Science degree, as well as certification programs for school library media specialists. Students enrolled in LIS programs, under the mentorship of the program faculty, prepare for careers in the information professions as digital content managers, librarians, archivists, records managers, college and university faculty members, supervisors in diverse information centers, and as information specialists.

The MLIS degree, which requires completion of 36 credits of course work is offered both on campus and through the MLIS: Pitt Online Program, which is a fully online program accredited by the American Library Association that can be completed in six terms of study.

The core curriculum (12 credits) is enriched by advanced courses in management, technology, resources and services for specific patron groups, and organization of information. Upon award of the MLIS degree, graduates are prepared to make contributions to the profession at the local, national, and international levels. On-campus students may target their career goals by enrolling in one of our top-ranked specializations.

The Doctor of Philosophy in Library and Information Science degree prepares students for advanced work in research, teaching, and administration. The program will give students the opportunity to gain skills in teaching or research appropriate for careers at major research universities, teaching institutions, and library systems.
Beyond curricular offerings, educational experiences available to students in the program include colloquiums, practical experience in professional settings, participation in national conferences, and attendance at professional association meetings.

**Research Focus**

Members of the LIS faculty are active researchers, with records of funding from governmental agencies and private sources. While both master's and doctoral students have opportunities to work with faculty on research projects, doctoral students are most involved in the research process.

Some areas of research interest include (but are not limited to) archives, health resource, children's information, digital libraries, interactive information retrieval, library management, organization of information, cyberscholarship, social information tools, science and technology studies, digital humanities, and school library media center management.

**Contact Information**

Library and Information Science Program  
School of Information Sciences  
135 North Bellefield Avenue  
412-624-3988  
Fax: 412-628-5231  
E-mail: lising@is.pitt.edu  
www.ischool.pitt.edu/lis

**Master of Library and Information Science (MLIS) Degree**

The role of information professionals has changed dramatically as the volume of available information has increased and technology for information search and retrieval has advanced. The ability to manage the growing array of information tools has led to new opportunities for those who want to work in the information field, which is a discipline that bridges the management of both traditional and emerging information sources. The MLIS program is responsive to the information marketplace and encourages the development of creativity, professionalism, and a proactive attitude to the needs of various clienteles in traditional and digital information service environments.

The program is accredited by the Committee on Accreditation of the American Library Association. The MLIS Program is ranked tenth in the nation by *U.S. News & World Report* and many of its specializations are also highly ranked.

**Admissions**

The Library and Information Science Program seeks students with diverse educational and career backgrounds. Applicants for graduate study must have earned a bachelor's degree from an accredited college or university with a scholastic average of B (3.0 on a 4.0 scale) or better. Submission of scores from a standardized predictor test is required for admission to the MLIS program. Applicants with post-bachelor's advanced degrees are exempt from this requirement. Students who have not worked in libraries may elect to do a 3 credit Field Experience.

A maximum of 6 credits earned with a grade of B or better may be transferred toward either the master's or PhD degree from institutions fully accredited for graduate study, provided that these credits have not been applied to any other degree or certificate, that they are applicable to the students' program of study, and that they are not older than the statute of limitations for the degree.

**International Applicants**

There are different documentation requirements for international students. These are explained here.

**English Language Proficiency**
Graduate students must possess sufficient knowledge of English in order to study, to understand lectures, and to participate successfully in class discussion without being hindered by language. The Test of English as a Foreign Language (TOEFL) must be taken if the applicant's native language is not English. The institution code for the University of Pittsburgh is 2927 and the department code is 90.

A minimum score of 550 (paper-based), or 80 (Internet-based) on the TOEFL is required for admission to graduate study in this program. The requirement to take the TOEFL may be waivered if the applicant has received a degree from an accredited institution in the United States.

Prior to registration, students with TOEFL scores less than 600 (paper) or 100 (Internet-based) will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study.

Students may choose to take the International English Language Testing System exam (IELTS) in place of the TOEFL. Students must receive a score of Band 6.5. Students who do not achieve a score of Band 7.0 score or better will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study. Other admission requirements vary depending upon the chosen program.

**Application Fee**

All applicants are required to submit an application fee as determined by the School of Information Science. This fee is non-refundable.

**School-based Financial Assistance**

Financial assistance is available at www.ischool.pitt.edu/admissions/financial-aid.php.

**Doctor of Philosophy in Library and Information Science (PhD) Degree**

The Doctor of Philosophy in Library and Information Science degree prepares students for advanced work in research, teaching, and administration. The primary purpose of this 54-credit degree is to develop an understanding of library and information science beyond the master's degree, with particular emphasis on the conduct of original research, the production of significant and generalizable research findings, and the contribution of such findings to public knowledge.

The advisor selected by the student for the period prior to the dissertation stage of the program is the program advisor; before the dissertation proposal is prepared, the student should select a dissertation advisor. The program advisor and the dissertation advisor may be the same person, but the student has the option to select a different advisor for the dissertation. The advisor must be a member of the graduate faculty in the Library and Information Science Program who is able to spend the time and effort necessary for the advising role, be available for examinations, and with whom a productive and comfortable working relationship can be established.

For complete information on the PhD program, consult Statement of Requirements for the Degree of Doctor of Philosophy at http://www.ischool.pitt.edu/lis/degrees/phd.php.

**PhD Admission Requirements**

The following are requirements for admission to the program:

- A master's degree from a program accredited by the American Library Association, a recognized international program, or the equivalent in a closely related field of study.
- Attainment in graduate work of a minimum grade point average of 3.50 (on a scale where A=4.00). An international student's grade point average will be calculated on the basis of equivalency from universities that use a different scale.
- Submission of scores from a predictor test, such as the GRE, GMAT, MCAST, LSAT or MAT, taken within the last three years. Institutional/program codes may be found here
- At least three references from persons in the professional and academic communities.
An interview may be required
As evidence of the ability to undertake doctoral work, the student's application must be accompanied by:

- An essay (not exceeding 1,000 words) indicating, as specifically as possible, the student's academic and professional goals in relation to the Library and Information Science doctoral program and identifying potential areas and/or topics in which the student expects to pursue dissertation research.
- A complete curriculum vitae that provides an overview of education, work, publication, and other professional activities.
- At least one example of scholarly research or professional writing in any format (print or electronic). The student should describe fully any published or unpublished research, thesis, contributions to the professional or scholarly literature, and other professional or academic experience relevant to an assessment of capacity to pursue doctoral study successfully.
- If the candidate has had appropriate professional work experience, a brief description should be provided.

Credentials of prospective students are reviewed by the Admissions and Review Committee and voted upon by the LIS Committee on Doctoral Studies throughout the year. However, students who are applying for financial aid should be aware that they must be admitted and meet financial aid deadlines to ensure consideration for funding. PhD students may begin their studies only in the fall term in order to ensure a coherent program of study.

International Applicants

There are different documentation requirements for international students. These are explained here.

English Language Proficiency

Graduate students must possess sufficient knowledge of English in order to study, to understand lectures, and to participate successfully in class discussion without being hindered by language. The Test of English as a Foreign Language (TOEFL) must be taken if the applicant's native language is not English. The institution code for the University of Pittsburgh is 2927 and the department code is 90.

A minimum score of 550 (paper-based), or 80 (Internet-based) on the TOEFL is required for admission to graduate study in this program. The requirement to take the TOEFL may be waived if the applicant has received a degree from an accredited institution in the United States.

Prior to registration, students with TOEFL scores less than 600 (paper) or 100 (Internet-based) will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study.

Students may choose to take the International English Language Testing System exam (IELTS) in place of the TOEFL. Students must receive a score of Band 6.5. Students who do not achieve a score of Band 7.0 score or better will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the test, the student must complete the remedial course during the first two terms of study. Other admission requirements vary depending upon the chosen program.

Proficiency program: Students may choose to take the International English Language Testing System exam (ELTS) in place of the TOEFL. Students should receive a minimum result of Band 7.0 on the IELTS.

Statute of Limitations

All requirements for the PhD degree must be completed in not more than six calendar years from the time of first registration. Students may, in extenuating circumstances, submit a formal request for extension of their statute of limitations or for a leave of absence from the program.

PhD Research Areas

http://www.ischool.pitt.edu/lis/degrees/phd.php

Telecommunications and Networking
The School of Information Sciences offers a Master's degree, Certificate of Advanced Study in Telecommunications and a PhD degree in Information Sciences with a focus in Telecommunications. This program prepares students for careers in a variety of arenas including industry, business, government, health care, education, and the nonprofit sector in positions such as network engineers or analysts, network administrators or managers, consultants, systems engineers, and research and development engineers (with appropriate undergraduate education).

Research Focus

Members of the faculty are active researchers with funding from governmental and/or corporate sources. Both master's and doctoral students have an opportunity to work with faculty on research projects, and doctoral students conduct independent research for their dissertations. Faculty members and students conduct research on a wide variety of topics including (but not limited to) wireless networks and security, network design and survivability, computer networks, network policy, and economics of the telecommunications industry.

Contact Information

Telecommunications Program
School of Information Sciences
135 North Bellefield Avenue
412-624-3988 or 800-672-9435
Fax: 412-624-5231
E-mail: teleinq@sis.pitt.edu
www.ischool.pitt.edu/tele

Master of Science in Telecommunications Degree Program

The Telecommunications and Networking program offers hands-on learning opportunities in telecommunications systems, computer networks, policy and management, wireless systems, and network security so that you will find a rewarding career in industry, government, education or the nonprofit sector. The MST program is a 37-credit program that can be completed in one year of full-time study or as many as four years of part-time study.

For complete program details, visit www.ischool.pitt.edu/tele/degrees/mst-program.php

Admissions

http://www.ischool.pitt.edu/tele/degrees/mst-admissions.php

To qualify for admission, an applicant must be a graduate of an accredited college or university. Preference will be given to candidates with a scholastic average B (3.0 on a 4.0 scale) or better.

All MST applicants are required to submit a recent score (within three years of the date of application) on the Graduate Record Examination as part of their admission credentials. Scores on all three sections (verbal, quantitative, and analytical) of the General Section should be submitted.

While submission of the GRE scores are preferred, a recent and strong performance on the GMAT will be accepted in lieu of taking the GRE exam. The institutional number for the University of Pittsburgh is 2927 and the department code is 0404.

The student must have completed the following course work (at the undergraduate or graduate level), with a grade of B or better, prior to admission to the MST program:

- Computer programming skill in at least one scientific programming language
- Probability (a 3-credit course)
- Calculus (a 3-credit course).

The following courses (or their equivalent), while not counting towards the 37-credit degree, may be required depending upon previous educational background:
English Language Proficiency

Graduate students must possess sufficient knowledge of English to study without being hindered by language problems, to understand lectures, and to participate successfully in class discussion. The Test of English as a Foreign Language (TOEFL) must be taken if the applicant's native language is not English. The institution code for the University of Pittsburgh is 2927 and the department code is 90.

A minimum score of 550 (paper-based) or 80 (Internet-based) on the TOEFL is required for admission to graduate study in this program. The requirement to take the TOEFL may be waived if the applicant has received a degree from an accredited institution in the United States.

Prior to registration, students with TOEFL scores less than 600 (paper-based) or 100 (Internet-based) will be given the on-campus administered English Language Proficiency Test (The Michigan Test). If remedial courses in English as a second language are recommended as an outcome of the Michigan Test of English Proficiency, the student must complete the remedial course during the first two terms of study.

Students may choose to take the International English Language Testing System exam (IELTS) in place of the TOEFL. Students must receive a score of Band 6.5. Students who do not achieve a score of Band 7.0 or better will be given the on-campus administered English Language Proficiency Test. If remedial courses in English as a second language are recommended as an outcome of the Michigan Test of English Proficiency, the student must complete the remedial course during the first two terms of study.

Academic Advising

Each student is assigned an academic advisor at the time of admission to graduate study. These assignments are made primarily on the basis of the student's background and interests as shown in the application. The student may at any time elect to change advisors—any such change requires the consent of the new advisor and must be reported to the Program Chair.

In consultation with the advisor, the student must complete a Plan of Study at the time of registration. The Plan of Study forms are available here. A Plan of Studies is a series of courses designed to meet the minimum exit competencies judged by the faculty to be necessary for employment as an information professional. All Plans of Study must have the approval of the advisor and will be used to ensure that the student has met all requirements for graduation.

Statute of Limitations

The Master's Degree program must be completed within four years of the first term in which courses were taken after admission. The normal full-time course load is 9 to 12 credits per term; thus, a full-time student will complete the program in three or four terms. The normal part-time course load is 6 credits per term, which permits the part-time students to complete the program in six terms. The faculty, in response to a student petition, may approve exceptions to the four-year limit if extenuating circumstances exist.

Registration and Residence Requirements

To maintain active student status, students must register for at least 1 credit during one of the three terms of the calendar year. It is recommended, however, that part-time students register for at least 6 credits during two of the three terms of the academic year to maintain reasonable progress through the program.

The PhD in Information Science with a Focus in Telecommunications

The Doctor of Philosophy degree program provides research-oriented graduate study and professional specialization in telecommunications. The candidate must give evidence of superior scholarship, mastery of a specialized field of knowledge, and demonstration of ability to do significant and relevant research. Students interested in the PhD degree should consult the Web site, www.ischool.pitt.edu/tele/degrees/phd.php.
Admission Requirements

Students seeking admission to the PhD program with a focus in Telecommunications must:

- Hold a master's degree from an accredited university, a recognized international program, or the equivalent.
- Have maintained in graduate work of a minimum grade point average of 3.3 (on a scale with A having a value of 4 points per credit). An international student's grade point average will be calculated on the basis of equivalency from universities that use a different scale.
- Submit scores from a predictor test (if not taken previously) such as the Graduate Record Examination (GRE) or equivalent examination. Scores on all three sections (verbal, quantitative, and analytical) of the GRE must be submitted.
- Provide evidence of the ability to undertake doctoral work, in an essay (not exceeding 1,000 words) indicating, as specifically as possible, the student's academic and professional goals in relation to the Telecommunications doctoral program and identifying potential areas and/or topics in which the student expects to pursue dissertation research.
- Provide at least three references from persons in the profession and academic communities.
- Have successfully completed:
  - Two different scientific computer programming language classes
  - Coursework in probability and statistics
  - Differential and integral calculus classes

Statute of Limitations

All requirements for the PhD degree must be completed in not more than six calendar years from the time of first registration. Students may, in extenuating circumstances, submit a formal request for extension of their statute of limitations or for a leave of absence from the program.

Journal Requirement

All PhD students are mandatorily required to submit an article of publishable quality to a journal before the degree is awarded.

PhD Research Areas

http://www.ischool.pitt.edu/tele/degrees/phd-advising.php

Information Science - Telecommunications Focus, PhD

PhD Degree Requirements

The Telecommunications PhD program requires a minimum of 72 credits beyond the Bachelor's degree. The 72 credits must include the required courses (or their equivalent) for the MST degree at the University of Pittsburgh. Also included in the 72 credits are:

- 12 credits of required courses
- 12 credits of doctoral seminars
- 6 credits of minor courses
- At least 18 credits of dissertation research and writing

48 of the 72 credits must be advanced coursework beyond the MST degree (or its equivalent).

Graduation depends upon meeting the minimum credit requirements and all other requirements. Graduate degrees are conferred only on those students who have completed all courses required for the degree with at least a 3.3 GPA. Grades of C or lower are unacceptable for graduation credit.

All students who are candidates for doctoral degrees are governed by the regulations of the University Council on Graduate Study, which establishes minimum standards for graduate work throughout the University as well as by those regulations established by the iSchool faculty.
Residency Requirements:

Full-time study on campus is considered most beneficial to students, but it is recognized that students may have off-campus responsibilities as well. The PhD degree, therefore, can be completed by a combination of full-time and part-time study. Three terms of full-time study are required, two of which must be consecutive and must be taken after successful completion of the preliminary examination. Full-time study is defined as nine or more graduate credits per term.

Preliminary Examination Requirement

The preliminary examination, according to Regulations Governing Graduate Study at the University of Pittsburgh, is held:

...to assess the breadth of the student's knowledge of the discipline, the student's achievement during the first year of graduate study, and the potential to apply research methods independently.... The evaluation is used to identify those students who may be expected to complete a doctoral program successfully and also to reveal areas of weakness in the student's preparation.

The Telecommunications and Networking faculty has clarified further that the overall objectives of the preliminary examination are:

- To test the PhD students for breadth of knowledge
- To evaluate their skills, and their ability to apply them
- To evaluate their ability to do research, and

The prelim will consist of undertaking a research project, submitting a research paper, and an oral presentation and defense. For more details, see http://www.ischool.pitt.edu/tele/documents/PhD_description.pdf.

With the successful completion of the preliminary examination, the student is fully admitted to doctoral study in telecommunications. The Program Chair will notify the student, in writing, of admission to doctoral study. After admission, the student must complete the remaining coursework including doctoral level seminars; probability and statistics, research design, and information science course requirements; and the residency requirement.

Comprehensive Exam

The student must satisfactorily pass a comprehensive examination designed to assess mastery of the general field of telecommunications, acquisition of both depth and breadth in the area of specialization within the field, and ability to use the research methods of the discipline. The purpose of the comprehensive examination is to assess the student's ability to understand a subarea of telecommunications in depth. In order to do research, a student must be able to read, understand, present, and criticize research papers in the field. It is also important that the student be able to explain such papers in depth to someone who is unfamiliar with that area. Thus, this examination centers on the development of a tutorial as well as a lecture in which the student must explain the subject to the satisfaction of the faculty. From a learning perspective, this provides the student with an experience of structuring and explaining a technical topic in detail. It is expected that a student has completed the minimum 30 credits of coursework before taking the comprehensive exam.

Candidacy and Dissertation Requirements

Doctoral students are required to take a minimum of 18 dissertation credits as part of their study. After successfully completing the comprehensive examination, the student will select a dissertation advisor and a committee. Then, the student in consultation with the dissertation advisor, must prepare a dissertation proposal which is then presented to the committee in a public session. The dissertation committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree. When the proposal has been successfully defended, the chair of the student's dissertation committee shall notify the Chair of the PhD Committee, the Telecommunications Program Chair, and the Dean of the School of Information Sciences that the student has achieved formal candidacy.

Information Science and Technology, PhD
PhD Degree Requirements

http://www.ischool.pitt.edu/ist/degrees/phd-details.php

There are three stages of admission to the doctoral program: (1) admission to graduate study when the student first matriculates, (2) admission to doctoral study following successful completion of the preliminary examination, and (3) admission to candidacy following successful completion of the comprehensive examination and the approval of the dissertation proposal. A minimum of 48 credits, including 30 course and seminar credits beyond the master's degree, and at least 18 dissertation credits are required. Students without a master's degree will be required to take a minimum 24 additional credits of coursework or seminars, for a total of 72 credits beyond the bachelor's degree. Students who did not take the prerequisite courses as part of earlier studies should expect to complete admission requirements or equivalent courses.

Graduate degrees are conferred only on those students who have completed all courses required for the degree with at least a 3.3 GPA. Courses numbered below 2000 do not meet the minimum requirements for doctoral study, although they may be taken to supplement a doctoral program.

Preliminary Examination Requirement

The Preliminary Examination is composed of an oral presentation related to a research oriented publication. In preparation for the preliminary examination, which is usually taken in the third semester of study, PhD students will complete the following course work.

- Four graduate-level courses, one in each of the following areas: Research methods, foundations, design, and information
- Six credits of independent study focused on a research project, which will result in an original, publishable quality research paper (the basis for the preliminary exam)
- Three doctoral seminars (9 credits) are required, including an Introduction to Doctoral Program (INFSCI 3005). Advanced doctoral seminars will be focused on single research themes.

While the preliminary examination can be taken before the completion of the core courses and doctoral seminar, the preliminary examination requirement will not be considered satisfied until all core courses and doctoral seminars are completed.

Research Project and Paper

During the first year of doctoral study, under the direction of your advisor (or another full or adjunct member of the department graduate faculty), students will design and complete a research project. The project should reflect only those activities undertaken during the first year of study. A previous master's thesis or other work completed prior to the start of doctoral study may not be submitted for this requirement. While much research involves working in a larger team, your role in the project and in writing the paper should be significant. You must be the primary author, and ideally you will be the sole author. You should seek a project or a part of a project in which you take the lead in conducting the research and writing up the results under the direction of your advisor. However, unlike a dissertation or thesis, the research paper submitted for the preliminary evaluation may include co-authors. In this case, the role of each co-author should be clearly stated in writing by the student and submitted along with the research paper. Furthermore, the paper may be integrated with other work and later submitted for publication with a longer list of authors.

Comprehensive Examination Requirement

The comprehensive examination requires successful completion of the preliminary exam. The student will choose three areas of concentration and three faculty members for the comprehensive examination committee, one of whom is the advisor. In preparation for the comprehensive exam, it is expected that the student will complete 3 credits of advanced statistics. Once the committee and the topic areas are selected, the student will prepare an activity and reading list with the advice and approval of the committee members. The student will then conduct whatever preparation is necessary. When the student is ready, he/she will inform the advisor who will ask each member of the committee to submit one or more questions to the advisor. The advisor will be responsible for constructing the exam with an appropriate balance over the three topic areas. The student will be given the questions and allowed one week to prepare written answers to the questions. After review of the written answers, an oral examination will be scheduled. The oral questions will cover the answers on the written examination, and more broadly, knowledge of the material in the three areas of concentration. The result of the comprehensive examination will be a pass or fail. If a student fails, they may retake the exam one more time.
Candidacy and Dissertation Requirements

Doctoral students are required to take a minimum of 18 dissertation credits as a part of their study. Dissertation credits should be taken during terms when a student is actively working on the dissertation. In any term in which a student is enrolled for dissertation credits, the student should meet with their advisor on a regular basis to monitor that appropriate progress is being made towards the completion of the dissertation proposal or the dissertation. The specific activities in a given term should depend on the current stage of the dissertation process. In addition to writing the proposal and dissertation itself, other appropriate activities may include reviewing the literature, programming, prototyping, running preliminary studies, writing grant proposals, preparing journal articles related to the dissertation or presenting preliminary results at conferences.

Once the comprehensive examination is successfully completed, the student is officially a doctoral candidate. After becoming a doctoral candidate, the student can propose and defend a dissertation topic.

Library of Information Science, PhD

PhD Degree Requirements

This PhD degree requires a minimum of 54 credits beyond the master's degree with a total credit minimum of 72. A minimum of 36 credits must be taken in advanced course work. The student must receive a letter grade in each course taken in this 36-credit requirement (except for the teaching practicum course). An additional 18 credits are required, which must be applied to dissertation research and writing. However, regardless of the number of credits taken, no more than 18 credits for dissertation research and writing may be applied toward graduation.

The minimum of 36 credits of course work, all of which must be on the graduate level, must be distributed as follows:

- 3 credits: LIS 3000 INTRODCTN TO DOCTRAL STUDIES
- 9 credits: 3000-level doctoral seminars in SIS
- 3 credits: LIS 3950 TEACHING PRACTICUM or FACDEV 2200 PRACTCM ON UNIVERSITY TEACHING
- 6 credits: Courses in research methodology and statistics
- 6 credits: Courses in cognate field
- 9 credits: Courses may be:
  - 3000-level independent studies or doctoral seminars at the iSchool
  - Additional 3000-level doctoral seminars at the iSchool
  - Additional cognate courses (up to 6 credits)
  - Additional research methodology courses

Additional Requirements

PhD degrees are conferred only on those students who have completed all courses required for the degree with at least a 3.50 GPA.

Doctoral students are required to devote some portion of their studies to work on other disciplines in order to broaden their perspectives and deepen their understanding of library and information science. To fulfill the cognate requirement, students are required to take a minimum of 6 credits and a maximum of 12 credits in some area of graduate study outside the field of library and information science. These credits may be from more than one department or school.
The research methodology course requirement must be fulfilled prior to taking the preliminary examination. Research methodology courses may include courses in statistical analysis, general research methodology, and specific research methods or research methods used in specific fields of study such as historiography, ethnography, or case and field study.

A three-credit teaching practicum is required for all doctoral students in order to provide the student with teaching experience that may become part of the student's professional vita. The teaching practicum is usually taken after completion of two terms of study. The student is responsible for identifying an appropriate course related to his or her areas of interest and obtaining the agreement of the instructor of record.

Residence and Registration Requirements

According to University of Pittsburgh policy, students seeking the PhD degree are required to engage in a minimum of one term of full-time doctoral study, which excludes any other employment except as approved by their departments. Doctoral students must register for at least 3 credits in each term until they have achieved candidacy. To maintain active status, all doctoral candidates must be registered for a minimum of 3 credits in each 12-month period (3 credits in one term or 1 credit in each of three terms) from the time of admission to candidacy until receipt of degree.

School-Based Financial Support


Preliminary Examination

Upon completion of 24 credit hours of course work, each student submits for review a portfolio comprising the best representation of work completed thus far. The student presents this portfolio orally to the Doctoral Studies Committee (DSC) as a whole, which votes on its acceptability. The Preliminary Examination is based on the breadth and depth of knowledge as addressed through course work, as well as whether the course work taken will support the research plan the student submits and defends to the DSC.

Comprehensive Examination

The Comprehensive Examination is conducted by a three person committee the faculty advisor and two faculty members chosen by the student and the faculty advisor. The examination consists of a written take-home exam over two weeks and an oral examination conducted by the student's committee. The take-home exam has two parts: a broad perspective on current issues in the field of library science, information science, or archives, depending on the student's general area, and the area of the student's research specialization.

Language Requirement

Students are required to be proficient in any languages necessary for completion of doctoral work. Depending upon the student's course of study, proficiencies in modern languages, linguistics, and/or computer languages may be required.

Candidacy and Dissertation

For admission to formal candidacy for the PhD degree, a student must have:

- Passed the preliminary evaluation
- Completed a minimum of 36 credits beyond the master's degree with a GPA of 3.50 or higher
- Passed the comprehensive examination
- Successfully defended the dissertation proposal and received permission from the Dissertation Committee to begin research
Students demonstrate their ability to complete a sound project of original research by presenting and defending the dissertation proposal to their Dissertation Committee. The Dissertation Committee must unanimously approve the dissertation topic and research plan before the student may be admitted to candidacy for the doctoral degree.

**Public Presentation Requirement**

During the course of the PhD program, each student is required to make a public presentation on a research project in which the student is engaged.

**Information Science and Technology, MSIS**

**MSIS Degree Requirements**

A minimum of 36 credits is required to complete the MSIS degree. Basic course requirements are as follows:

- 6 credits of course work in the Formal or Applied Foundations area
- 18 credits of course work in the Systems and Technology areas (INFSCI 2500 required)
- 6 credits of course work in the Cognitive Science or Cognitive Systems areas
- 6 credits of electives--students may pursue a thesis or a practicum as one of the elective options. Students should know that a thesis is not a requirement of the MSIS degree

**Master Degree Program with GSPIA**

The School of Information Sciences (SIS) has entered into a joint agreement with Graduate School of Public and International Affairs (GSPIA). The program allows for students to complete the Master of Science in Information Science (MSIS) degree and one of three degrees in GSPIA simultaneously. To be admitted fully into the joint program, students must be accepted by both GSPIA and SIS.

**Admission Process**

Students wishing to enter this program need to submit the regular application form, along with two recommendation letters, an official transcript, and a copy of GRE or GMAT. International students have additional submission requirements.

All students are expected to have completed the prerequisite courses in

- mathematics,
- statistics (or comparable coursework),
- structured programming language (C or C++ recommended)

**Course of Study**

The course of study for the Master of Science in Information Science (MSIS) degree under the joint agreement consists of a minimum of 30 credits in the Graduate Information and Technology Program, plus an additional 30-39 credits at GSPIA depending on the selected area of study. Students may register under either the GSPIA or SIS school code during any given semester, but must have registered under each school code for at least 24 credits by the completion of the degree. Please be aware that there is a small tuition differential between the two schools.

The 30 credits taken in SIS are to be distributed as follows:

- 3 credits in the Mathematical and Formal Foundations area.
- 6 credits in the Cognitive Science area or Cognitive Systems area. INFSCI 2300 and INFSCI 2350 are recommended.
- 18 credits in the Systems and Technology area or Cognitive Systems area, including INFSCI 2500.
3 credits as Electives from any remaining course in the Information Science program.

Note:

Any changes to the distribution above must be requested, in advance, through petition to the faculty.

City of Opportunities

Pittsburgh is big enough that opportunities for internships, jobs, and access to a rich cultural scene as well as the outdoors-abound.

Library of Information Science, MLIS

MLIS Degree Requirements

Students seeking the MLIS (both on-campus and MLIS: Pitt Online) must complete the following requirements:

- Complete a minimum of 36 credits of graduate-level course work
- Complete core courses of the pathway in which the student is enrolled with a grade of "B" or better in each
- Maintain a B (3.00) average for the required 36 credits of graduate-level course work

Requirements for the MLIS degree must be completed within a period of four calendar years from the student's initial registration.

MLIS Pathways

The pathways below have been developed in response to needs expressed by the profession. In addition to the core knowledge of librarianship, you'll gain specific skill sets pertinent to your career goals.

Archives and Information Science Pathway

Archives and Information Science >

( will appear on transcript)

Records are created and maintained for purposes of evidence and accountability as well as for personal, social and corporate memory. Archives serve a crucial cultural function, providing society with a sense of identity and memory. Records Management programs help organizations to be compliant with regulatory agencies, responsible to constituent groups, and effective and efficient in the use of informational resources. Graduates of the Archives and Information Science Pathway will have the skills and knowledge to work as archivist, special collections librarians, records managers, corporate archivist, digital asset coordinators, and more.

Data Stewardship Pathway

Data Stewardship >

The Data Stewardship Pathway will provide an introduction to data curation, digital preservation and data science, and will frame these topics within the broader context of data informatics, digital scholarship, research integrity, disciplinary diversity and cultural change. In addition to setting the scene from a policy perspective, the Pathway will provide the practical skills needed to carry out effective research data management and preservation, and will situate these practices in the wider landscape of open science and open scholarship. This Pathway will equip graduate students...
with the necessary knowledge, skills and competencies to work in a range of data stewardship roles located in libraries, archives, data centers, government, industry and business.

Library and Information Services Pathway

Library and Information Services

While information professionals traditionally have worked in cultural heritage institutions such as the library, today their skills are needed in all sectors of the economy. Now, more than ever, the world needs highly qualified specialists in libraries and information services. The Library and Information Sciences Pathway will prepare students for leadership roles in the identification, organization, preservation and effective use of information and cultural artifacts. Graduates of this pathway will be prepared for careers as web content managers, digital asset coordinators, librarians, information architects, and more.

Telecommunications and Networking, MST

The Telecommunications and Networking program offers hands-on learning opportunities in telecommunications systems, computer networks, policy and management, wireless systems, and network security so that you will find a rewarding career in industry, government, education or the nonprofit sector.

The MST program is a 37-credit program that can be completed in one year of full-time study or as many as four years of part-time study. Prerequisites for admission to the MST program include:

- baccalaureate degree
- computer programming experience in at least one scientific programming language
- completion of a 3-credit course in probability
- and a 3-credit course in calculus.

The following courses are pre-requisites for a number of graduate-level Telecommunications courses. If you have not taken these, or their equivalent, you will need to do so.

- Introduction to Telecommunications (TELCOM 2000)
- Physical Layer of Communications 1 (TELCOM 2200)
- Software Tools & Techniques (TELCOM 2300)

MST Degree Requirements

Completion of the Master of Science in Telecommunications degree requires a minimum of 37 credits. Three credits may be in practicum (a structured supervised employment situation) or a thesis. For research-oriented students, the faculty strongly recommends a 3-credit thesis in lieu of course work.

The 37-credit minimum of course work should include the following:

- 19 credits of required courses, including the one-credit telecommunications seminar course.
- 3 credits selected from the management/policy group.
- 15 credits of elective course work.

Students may choose to take more than the 37 credits required for the MST degree. However, the iSchool is not able to extend any financial aid beyond the required number of courses; any visa issues pursuant to extended study would have to be resolved by the student.

Specializations
Students who wish to focus on one of our specializations are encouraged to take as many courses as possible in that area of specialization as part of the 15 credits of electives.

Students can specialize in more than one area by taking offered courses in those particular areas, again as part of their 15 credits of electives.

**Telecommunications Systems**

Telecommunications systems are built on an infrastructure, similar to that classically used for telephony. In this specialization, you will investigate the physical technologies (copper and fiber) used for information transmission, the enabling transmission processes (such as multiplexing, synchronization, and noise filtering), and the systems that provide telephony (classic circuit switched and VOIP). If you pursue this track, you would likely be hired by a carrier, equipment manufacturer, consultant, or business for a career as a system engineer, network designer or manager, switching system designer, or telecom manager.

**Computer Networks**

Computer networking enables efficient communication and information sharing to take place among widely dispersed participants. The recent emergence of the global Internet and the availability of ever cheaper, more powerful computation and communication devices is paving the way for a new generation of ubiquitous and pervasive networks.

In this specialization, you will explore a variety of problems encountered in designing computer networks and learn common techniques to solve these problems. Courses are designed to equip graduates with the knowledge and skills required to contribute to the field of data communication and networking. The focus is on network models and architectures, protocol design and implementation, resource management, quality of service support, and security. You will acquire a solid conceptual and practical understanding of how computer network technologies operate and the ability to analyze the benefits and limitations of current and future networking technologies. You will also gain valuable insights into the design, management, and security of computer networks, and have an opportunity to take additional electives from the Department of Computer Science, depending on your interests.

**Policy and Management**

Telecommunications systems exist in social and organizational contexts. In this specialization, you will explore the relationships among telecommunications technologies, service providers, end users, and governmental entities. In telecommunications, industry structure and government regulation is closely tied to the details of technology, so it is important that students forging a career in this area have a thorough understanding of not only the technology, but also the historical and existing economic and political structures. In this specialization you may take additional courses from the Katz Graduate School of Business or the Graduate School of Public and International Affairs, depending on your interests. Upon graduation, you will be prepared for a career as a policy analyst or network manager.

**Wireless**

Wireless systems have become a vital infrastructure in today's society, and significant professional opportunities exist in this growing field. In this area, you will investigate the physical technology and enabling processes; the systems that provide cellular telephony, wireless LANs, and sensor networks; and mobile applications. You may select additional electives from the Department of Electrical and Computer Engineering. Graduates of this track have been hired by wireless carriers, manufacturers, and other organizations as system engineers and wireless network designers.

**Security**

Just as we safeguard data within computers, we must also assure that the information flowing over networks is protected. In this specialization you will investigate firewalls, encryption, fault tolerant network design, and other procedures for information assurance. Additional electives may be taken from both the Department of Computer Science and the Department of Mathematics. If you follow this track, you will be prepared for a career as a network security specialist with carriers, manufacturers, consulting firms, the government, financial institutions, and other enterprises.
Internet of Things

Information regarding this new specialization is forthcoming.

General

If you choose not to specialize in one particular area, the general course of study allows you to sample courses from all the specializations in preparation for dealing with the constant changes in telecommunications technology. Since change is the only constant in the telecommunications industry, your versatility as a generalist will enable you to handle challenges as they arise in the industry. Employers such as carriers, manufacturers, consultants, and other organizations (especially smaller ones) are seeking those graduates with a broad set of skills for careers as system engineers, network designers or managers, and telecommunications managers.

A generalist can take courses from any of the areas of specialization in consultation with the faculty advisor.

Big Data Analytics, ADVCT

Certificate of Advanced Study in Information Science

The iSchool provides several options for advanced study in information science beyond a bachelor's or master's degree. The Certificate of Advanced Study (CAS) offers a highly-concentrated curriculum on the theory and application of the most current information field trends.

Students can follow a 15-credit or 24-credit plan of study.

15-credit post-bachelor's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)*
- * eligible for Committee on National Security (CNSS) Certifications

15-credit post-master's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)*
  * eligible for Committee on National Security (CNSS) Certifications

Course work must be completed within a period of four calendar years from the student's initial registration in the certificate program. Students interested in the CAS should consult this Web site

Information Science and Technology - Security Assured Information Systems, ADVCT

Certificate of Advanced Study in Information Science
The iSchool provides several options for advanced study in information science beyond a bachelor's or master's degree. The Certificate of Advanced Study (CAS) offers a highly-concentrated curriculum on the theory and application of the most current information field trends.

Students can follow a 15-credit or 24-credit plan of study.

### 15-credit post-bachelor's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)*
  - * eligible for Committee on National Security (CNSS) Certifications

### 15-credit post-master's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)*
  - * eligible for Committee on National Security (CNSS) Certifications

Course work must be completed within a period of four calendar years from the student's initial registration in the certificate program. Students interested in the CAS should consult this Web site.

### Security Assured Information Systems (SAIS), ADVCT

Certificate of Advanced Study

The iSchool provides several options for advanced study in information science beyond a bachelor's or master's degree. The Certificate of Advanced Study (CAS) offers a highly-concentrated curriculum on the theory and application of the most current information field trends.

Students can follow a 15-credit or 24-credit plan of study.

### 15-credit post-bachelor's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)*
  - * eligible for Committee on National Security (CNSS) Certifications

### 15-credit post-master's certificates

- Big Data Analytics
- Security Assured Information Systems (SAIS)*
  - * eligible for Committee on National Security (CNSS) Certifications

### 24-credit post-master's certificate

CAS Requirements
The SAIS is a 15-credit certificate program designed to the needs of professionals with a Bachelor of Science or a Master of Science degree in Information Science or a related field in order to expand their professional skills and qualifications in the security assured information systems field.

**Download a copy of our information sheet and application checklist.**

### Core courses

Post-bachelor's students must complete the following three courses with a grade of B- or better:

Post-master's students must complete the following three courses with a grade of B or better:

- INFSCI 2150 - INFORMATION SECURITY AND PRIVACY
- INFSCI 2170 - CRYPTOGRAPHY
- TELCOM 2821 - NETWORK SECURITY

### Elective courses

Post-bachelor's students must complete one Networking or Systems and Technology course and one SAIS course available at the iSchool with a grade of B- or better:

Post-master's students must complete one Networking or Systems and Technology course and one SAIS course available at the iSchool with a grade of B or better:

Examples of these courses include but are not limited to:

- INFSCI 2540 - SOFTWARE ENGINEERING
- INFSCI 2620 - DEVELOPING SECURE SYSTEMS
- INFSCI 2621 - SECURITY MANAGEMENT AND COMPUTER FORENSICS
- INFSCI 2731 - SECURITY IN E-COMMERCE
- INFSCI 2955 - SPECIAL TOPICS: SYSTEMS
- TELCOM 2120 - NETWORK PERFORMANCE
- TELCOM 2813 - SECURITY MANAGEMENT AND COMPUTER FORENSICS
- TELCOM 2825 - INFORMATION SYSTEMS AND NETWORK INFRASTRUCTURE PROTECTION

### CNSS Certifications

Students completing the SAIS CAS will be eligible for the following Committee on National Security Systems (CNSS) Certifications:

- CNSS 4011 (Information Security Professionals - INFOSEC),
- CNSS 4012 (Designated Approving Authority - DAA), and
- CNSS 4013 (System Administrators in Information Security Systems - INFOSEC).

Students who chose TELCOM 2813 - SECURITY MANAGEMENT AND COMPUTER FORENSICS and TELCOM 2825 - INFORMATION SYSTEMS AND NETWORK INFRASTRUCTURE PROTECTION additionally receive the following CNSS certificates:

- CNSS 4014 (Information Security Officers - Advanced Level) or
- CNSS 4015 (System Certifiers).

### Telecommunications and Networking, ADVCT

**Requirements**
Students who have graduated from a master's program may pursue a certificate in Telecommunications.

In consultation with an advisor, students project a Plan of Studies to meet their specific interests or needs, and these plans may change as the program proceeds. Students may select graduate-level courses in other departments within the University as well as at Pittsburgh Council on Higher Education-cooperating institutions. Admission to all courses is contingent upon meeting course prerequisites and is subject to the advisor's approval.

Candidates for the Telecommunications certificate must complete the following requirements:

- A total of 24 credits in graduate-level courses acceptable to the advisor and passed with a grade point average of at least B (3.00 on a 4.00 scale)
- Fifteen of the 24 credits must be taken from among the approved courses for the MST degree program.

Course work must be completed within a period of four calendar years from the student's initial registration in the certificate program.

Program details are available at: www.ischool.pitt.edu/tele/degree/cas.php
School of Law

- Contact Information
- Admissions
- Scholarships and Financial Aid
- Flex-time Program
- Academic Standards
- Professional and Career Development
- School of Law Faculty
- Programs and Course Offerings

The essential mission of the University of Pittsburgh School of Law is to help lawyers and legal institutions to meet the demands of a rapidly changing legal and professional environment. Pitt Law excels in teaching the next generation of diverse legal professionals; producing research of impact and contributing to society through public service.

In serving its students, the school is committed to an active and inclusive spirit of community and to the effective, efficient, and congenial provision of service. In teaching, research, and public service, the School of Law aspires to conduct all of its programs at a nationally prominent level of quality that adds luster to the legal and business communities of Pittsburgh; that makes the school relevant to the key needs of this region's private, public, and nonprofit sectors; and that distinguishes it as one of the finest public urban law schools in the United States.

For more than 110 years, the School of Law has prepared students to become excellent attorneys and leaders in both the legal profession and in society. Today, Pitt Law builds on this proud history by training lawyers to take on the opportunities and challenges of 21st century legal practice in the United States and around the world.

At Pitt Law we turn out practice-ready lawyers by providing students with both traditional law school classroom experiences designed to develop and hone analytical and communication skills and with experiential learning opportunities in one of our six clinics, which range in subject area from Environmental Law to Family Law to Health Law. Students who wish to focus their studies can enjoy the numerous benefits of enrolling in one of our five certificate programs, with their opportunities for international externships, instruction in litigation skills by teams of top practicing litigators, or membership on an intellectual property moot court team. Seven joint degree programs, including two partnerships with Carnegie Mellon University, permit students to craft discipline-bridging courses of study in areas including public health, business administration, and international affairs. And Pitt Law students can serve as editors at the award-winning website JURIST, the world's only Web-based, student-powered legal news source, which is viewed weekly by 100,000 viewers and is based right here at the School of Law.

Among its first-professional degrees, the School of Law offers the Juris Doctor (JD) degree; a number of joint degree programs with other schools of the University and Carnegie Mellon University, leading to both a JD and a master's degree; and LLM degrees for foreign law graduates as well as several certificate programs. The School of Law also offers graduate programs leading to a Master of Studies in Law (MSL) and a Doctor of Jurisprudence (SJD) degree. For further information on the graduate programs, see the School of Law-Graduate Programs section of this bulletin.

Contact Information

Financial Aid and Admissions are located in the same office at the University of Pittsburgh School of Law.

Office of Admissions and Financial Aid
Barco Law Building
3900 Forbes Avenue
Pittsburgh, PA 15260

Website: www.law.pitt.edu

General Information: (412) 648-1413
Admissions Information: (412) 648-1805
Financial Aid Information: (412) 648-1415
Fax: (412) 648-1318
Email Admissions: admitlaw@pitt.edu
Email Financial Aid: lawfa@pitt.edu

Office Hours: 8:00 a.m. - 5:00 p.m. Monday through Friday

Walk in appointments are available during office hours; however, scheduling an appointment is encouraged. To schedule an appointment, please email or call our office.

Admissions

Pitt Law is highly competitive, and we base admissions decisions on many factors. Our admissions committee will carefully evaluate your graduate work, professional experience, and undergraduate GPA and make a decision on a rolling basis, or you may request a priority decision within 14 business days. Each program, degree and certificate has various requirements. Please see each program's requirements.

Qualifications for Admission to the Bar: In addition to a bar examination, there are character, fitness, and other qualifications for admission to the bar in every U.S. jurisdiction. Applicants are encouraged to determine the requirements for any jurisdiction in which they intend to seek admission by contacting the jurisdiction. Addresses for all relevant agencies are available through the National Conference of Bar Examiners.

Transfer Students

The University of Pittsburgh School of Law will accept transfer students after those students have successfully completed the first year of academic study at another law school. Applicants must complete the law school application and submit the following:

- Application fee
- Official LSDAS report
- Letter of good standing from the current law school dean
- Certified law school transcript
- Letter of recommendation from a current law school professor
- Final official undergraduate transcript

The deadline for submitting an application is June 1st of every year. Decisions made on transfer students depends on the number of seats available at Pitt Law, the QPA from the current law school and the competitiveness of the current law school.

If admission is granted, the transfer student's completed law school work will be evaluated for transfer credit in light of the curricular offerings at Pitt Law. Only up to 32 transfer credits will be accepted. However, only up to 29 credits will be accepted in the case of (1) a transfer student admitted from a U.S. law school that is not approved by the American Bar Association, (2) a transfer student who is a graduate of a foreign law school and who is admitted after completion of the Pitt Law LL.M. program, or (3) a transfer student who has not completed the Pitt Law LL.M. program and who is a graduate of a foreign law school for law school work done outside of the United States. All transferred credits must comply with the restrictions in ABA Standard 505.

In keeping with the requirements of The Order of the Coif, students are eligible for Coif membership only if they complete at least 75% of their law studies in graded courses. For transfer students, any credits transferred without grades will not count toward this requirement.

Visiting Students

A student may apply to visit at Pitt Law if he/she has completed two years of law study at another law school and has the permission of the dean of their current school. Applicants must complete the law school application and submit the following:

- Application fee
- Copy of your LSDAS report
- Letter from the dean stating the third year at Pitt Law will count toward a degree from the previous school
- Certified law school transcript.
The deadline for submitting an application is June 1st of every year. Decisions made on visiting students depends on the number of seats available at Pitt Law, the QPA from the current law school and the competitiveness of the current law school.

**Scholarships and Financial Aid**

All admitted students are reviewed for merit scholarship awards at time of admissions to Pitt Law. The merit scholarships are renewable for the second and third years of law school provided the recipient maintains a cumulative grade point average of 3.0 in their legal studies. Scholarship renewal review is conducted at the end of the academic year. Students whose scholarship is not renewed may request to have their scholarship reinstated at any time based upon earning the cumulative 3.0 grade point average in their legal studies.

Approximately 70 percent of the student body receives scholarship funds from the School of Law in the form of merit or need-based scholarship awards. The Law School offers various merit scholarships at the time of admissions. Some scholarship require an additional application and others are based on the materials submitted in your admissions application. If admitted, you will be emailed any scholarship application that requires additional materials.

Please visit the Pitt Law website for more details on available scholarships or contact the Financial Aid office.

**Loans**

For most students the major portion of law school costs are met through the Federal Stafford Loan, Federal Graduate PLUS Loan, and alternative educational loan programs.

Generally, to be considered for an educational loan as a law student, you must:

- Complete the Free Application for Federal Student Aid (FAFSA)
- Be a U.S. Citizen, permanent resident, or other eligible non-citizen
- Enrolled at least half-time in a degree program
- Registered with the Selective Service, if required
- Not owe a refund on a federal grant or be in default on a prior federal loan
- Maintain Satisfactory Academic Progress.

**Loan Counseling**

Before federal loan funds can be released, all incoming students must complete a Stafford Loan Entrance Counseling session, regardless of whether they have borrowed in the past. This counseling session is a federal requirement for all students to insure that they understand their rights and responsibilities as a borrower. Loan counseling can be completed online at www.studentloans.gov.

All students who have borrowed through the Stafford Loan Program are required to attend a Stafford Loan Exit Counseling session before they graduate or drop below half time. The counseling sessions will be schedule in April for all third year students. All third year students will receive notification of the time of the counseling sessions. The counseling sessions informs students of their rights and responsibilities as a borrower as well as giving students information on their repayment options.

**Flex-time Program**

The flex-time program is offered to students whose outside obligations necessitate a more flexible program of study than is traditionally available. All classes are still held during the daytime; however, hours may be planned according to personal needs and interests. The pace is intended to be less strenuous than the regular program. Course loads are optimally designed to result in graduation in four years rather than three with no fewer than 10 credits per semester. The option to accelerate is also available to flex-time students after the first year of study. Flex-time students are still required to pay full tuition. Applicants to the flex-program must include a letter with their application explaining their individual circumstances. The application process is otherwise the same.
Please note that flex-time is not a part-time program.

**Academic Standards**

The School of Law Policy on Written Work for Credit, its Standards of Academic Integrity, the Grading Guidelines, and other academic policies of the school are included in the Academic Rules section of the School of Law's web site.

**Professional and Career Development**

The Office of Professional and Career Development is dedicated to providing students and graduates with the information and tools necessary for successful career development and advancement. Our office assists students and graduates in their pursuit of careers in a wide variety of settings, including private law firms, public interest organizations, government agencies, corporate and business environments, judicial clerkships, academia, and non-traditional careers.

Through an extensive array of services including individual counseling, educational programming, interviewing opportunities, printed and online resources, job posting databases, and a substantial alumni network, the OPCD helps educate students and graduates for a lifetime of successful career management.

The OPCD also serves as an intermediary between prospective employers and law students. By posting job vacancies, scheduling on-campus interviews, sponsoring programs, and participating in and promoting off-campus job fairs, we provide a range of employment prospects. Through ongoing outreach, the OPCD Staff endeavors to create ever-increasing employer interest in Pitt Law students and graduates.

Each student will meet with a Career Counselor during their first year and is encouraged to meet with the counselor as often as needed. As a student begins to develop his or her legal career path they are able to work with an OPCD counselor whose background mirrors the student's desired path.

Our office is open Monday- Friday 8:30 a.m. - 5:00 p.m. Additionally, OPCD has daily walk-in hours and hosts "Facetime" in the student lounge.

**Location**

Barco Law Building  
Second Floor  
3900 Forbes Avenue  
Pittsburgh, PA 15260  
(412) 648-1411 / Phone  
(412) 624-4843 / Fax  
opcd@pitt.edu

**Programs and Course Offerings**

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

**School of Law's Programs**

You expect the Juris Doctor (JD) program at Pitt Law to offer a solid foundation in the basics of legal education. You might not expect the opportunity to specialize in areas like environmental and energy law; health law; and intellectual property, technology, and innovation law.

You might not expect to be able to pursue both a JD and a second master's degree at another Pitt school-in an area such as bioethics, business, public health, and social work-or at nearby Carnegie Mellon University in less time than it would normally take to complete two consecutive degrees.

You might not expect a 30-credit Master of Studies in Law advanced degree designed for graduates and mid-career professionals seeking to enhance their careers with a versatile alternative to the traditional three-year Juris Doctor degree. Or a Master of Laws degree to provide foreign law graduates...
with critical training in the common law legal tradition and the U.S. legal system during an academic year. Or even a completely-online Health Care Compliance Online Graduate Certificate Program developed by experts in compliance, law, and online education.

And you might not expect how quickly and the extent to which you'll get to apply those classroom lessons. Assisting the public through work with a clinic (health law, elder law, the environment, immigration, and more); serving as a full-time extern on Capitol Hill or throughout Washington, D.C., as part of the Semester in D.C. Program; interning with a federal agency, nonprofit, or corporation; and participating in a national or international moot court competition are just some of the opportunities you'll have to practice your skills and hone your expertise even before you graduate.

**Law - Juridical Science, SJD**

**Program Information**

The Doctor of Juridical Science (SJD) is the Law School's most advanced degree, which is designed for legal academics who wish to pursue advanced independent study, research and writing. The Law School's SJD program offers candidates the opportunity to become active members of a vibrant legal community.

**Degree Requirements**

The SJD is a research degree. There is no formal requirement for candidates to pursue course work, whether for credit or otherwise, other than required participation in a non-credit, ungraded colloquium for SJD students during their first year in the program. However, a candidate may be required by his advisor to take or audit courses and participate in seminars and discussions which will further the student's understanding of his or her field of knowledge and its relation to other fields. Each candidate will be allowed 2-4 years to complete the program, the first year of which must be spent in residency at the University of Pittsburgh School of Law. The year of residency is in addition to the LLM year for Pitt Law LLM graduates. A candidate is required to conduct rigorous research and produce an original dissertation that will contribute significantly to legal scholarship and further understanding of the law. Specifically, a candidate is required to submit a dissertation overview, defend that overview, submit a doctoral dissertation, and successfully defend the dissertation. The SJD degree must be completed under the supervision of a faculty member who has consented to serve as the faculty advisor.

**Law and Arts Management (Carnegie Mellon), JD/MAM**

The University of Pittsburgh School of Law and Heinz College offer a joint degree program designed to train students for careers in which arts management and law overlap. This program, spanning four years, prepares you for careers in which arts management and law overlap. You must satisfy both schools' degree requirements, but some credit is given by each school for completing the other school's program.

The joint degree program is designed to be completed in eight semesters over four academic years instead of the five years required if pursued separately. Students interested in the joint degree program can pursue both programs simultaneously. During the first year, students study at either the Heinz School or the School of Law, taking the standard first-year curriculum of the respective school. The second year involves full-time study at the other school. For the third and fourth years, students take courses at both schools. In order to graduate with both degrees, students have to fulfill both schools' degree requirements.

**Contact Information**

University of Pittsburgh School of Law  
Office of Admissions  
3900 Forbes Avenue  
Pittsburgh, PA 15260  
(412) 648-1413  
admitlaw@pitt.edu
Law Arts Management Requirements

The Heinz School of Public Policy and Management and the Law School have different degree requirements. Carnegie Mellon courses are counted in units and University of Pittsburgh courses are counted in credits. A 12-unit course is the equivalent of a 4-credit course. To fulfill the program requirements for the Law School, students have to complete 88 credits while the Heinz School requires 198 units for the MAM degree. Students in the joint degree program are able to transfer 30 units to the Heinz School degree after completing their JD degree and 14 credits to the JD degree after completing their MAM degree.

Students are required to register for a minimum of one class per semester at Heinz College during years 3 and 4 in order to qualify for the transfer of credits between institutions. A full listing of the requirements for graduation from the University of Pittsburgh School of Law can be found on the Graduation Requirements page.

Before selecting courses for each program, students are required to meet with their Academic Advisors at both programs to map out a course of study. In addition to the course work for both programs, Heinz School students are required to complete a summer internship after their first year at the Heinz School. Students can receive assistance from the Career Services Office in securing an internship.

Since degrees in the joint programs are awarded concurrently, it is important to note that a student who resigns from one program will be subject to all the requirements for graduation from the remaining degree program.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and Bioethics, JD/MA

JD/MA, University of Pittsburgh School of Arts and Sciences and the Center for Bioethics and Health Law

The School of Law and the School of Arts and Sciences (A&S) offer a joint degree program in law and bioethics. Graduates of the program receive the Juris Doctor (JD) degree, the basic professional degree in law, and the Master of Arts (MA) degree from FAS, in bioethics. The joint degree program is directed by Alan Meisel, JD, in cooperation with Lisa S. Parker, PhD, who directs the interdisciplinary Master of Arts in Bioethics.

The joint degree program has been established in recognition of the extensive and increasing overlap between law and bioethics. The objective of this educational program is to prepare graduates with an interdisciplinary background in law and bioethics so they can address those issues and situations that require knowledge of and expertise in both. Graduates will be academically prepared for professional roles as bioethicists in health care institutions, in public policy working for government or philanthropic organizations, or in the practice of law, for example, giving counsel to health care institutions.
Contact Information

University of Pittsburgh School of Law
Professor Alan Meisel
3900 Forbes Avenue
Pittsburgh, PA 15260
(412) 648-7120
meisel@law.pitt.edu

Requirements

The sequence of the curriculum is designed to allow students maximum flexibility. Students may either take the entire first-year School of Law curriculum intact, or they may take one bioethics course - Theoretical Foundations of Applied Ethics - in place of Criminal Law (which would then be taken in their second year of law school). Students should discuss this plan of study with Prof. Alan Meisel, Director of this joint program.

Writing Requirements

The writing requirements for both degrees are simultaneously satisfied by completion of the master's thesis requirement in a subject in the field of law and bioethics.

Practica

The Clinical Practica ensure that students will be comfortable in and knowledgeable about the clinical setting by learning how to identify the normative issues in clinical cases and to be able to give practical advice regarding difficult bioethical dilemmas. Students are scheduled for six credits of clinically-based work, which may be reduced to three for students with previous health care training. In Clinical Practica I and II students acquire familiarity with the clinical setting by

- rounding in specified services with residents, attending physicians, and other health care professionals, including one night on call per service
- participating in twice weekly seminars on medical sociology and clinical ethics and to fulfill those seminar requirements of reading, writing, discussion, and case presentations
- observing ethics consultations and clinical ethics teaching sessions
- completing a self-paced programmed text covering basic medical terminology

In Clinical Practicum II, students participate in an intensive four-week rotation in the clinical area of their choice, allowing in-depth development in an area of clinical medicine. Students should relate this intensive clinical experience to their thesis topic.

In addition to meeting the specifically required coursework for the JD degree and the MA degree, students will select electives from among an array of courses available in the two separate degree programs and in other parts of the University. For an up-to-date list of law school courses considered to be especially appropriate for students in this joint degree program, students should consult the courses listed as electives for the Health Law Certificate Program.

Students in the joint law and bioethics program will ordinarily fulfill the requirements of the Health Law Certificate Program in the law school and may obtain this certificate concurrent with the joint degree.

Advising

Students are required to consult with the Director of the Joint Degree Program during or prior to the spring registration period each year in order to assure that they meet all requirements of the Joint Degree program.
For Students Interested in Practicing in New York

Please be advised that students who wish to be admitted to practice in New York should not enroll in this joint degree program unless they limit the number of credits from outside the Law School that count toward their JD degree to no more than 12. See New York Rules of Court § 520(c)(5).

Credits

Students enrolled in the joint degree program accomplish in three to four years what would take four or more years if the two degrees were obtained separately. The total required number of credits 100, as compared with 118 credits if the two degrees were taken separately. The 100 credits include 34 credits of specifically prescribed* law courses, the Bioethics and Health Law Clinical Practicum (3 credits), and 18 specifically prescribed credits in bioethics. Within the remaining 45 credits, students must satisfy requirements for their law degree, take a course from the list of Restricted Elective courses for the bioethics degree, and take at least 3 credits in a course relevant to bioethics (either in the law school or not).

Taken as a joint degree program, the two degrees are ordinarily earned in 7 semesters and one summer.

During at least 5 semesters, joint degree students must be coded by the University Registrar as "primary law." During these semesters, they pay tuition at the Law School rate. They must enroll in at least 10 credits of law school courses.

Specifically Prescribed Law Courses

- LAW 5020 - CONTRACTS
- LAW 5046 - CRIMINAL LAW
- LAW 5720 - LEGAL ANALYSIS AND WRITING (Fall Term)
- LAW 5076 - LEGAL ANALYSIS AND WRITING (Spring Term)
- LAW 5028 - TORTS
- LAW 5033 - CIVIL PROCEDURE
- LAW 5032 - LEGISLATION AND REGULATION
- LAW 5024 - PROPERTY
- LAW 5061 - PITT LAW ACADEMY (Fall Term)
- LAW 5062 - PITT LAW ACADEMY (Spring Term)
- BIOETH 2604 - CLINICAL PRACTICUM 1
- BIOETH 2904 - MA THESIS IN BIOETHICS
- BIOETH 2606 - CLINICAL PRACTICUM 2
- BIOETH 2664 - BIOETHICS
- BIOETH 2658 - PHILOSOPHY OF MEDICINE
- BIOETH 2661 - THEORETICAL FOUNDATIONS

Additional credits to complete the graduation requirement may include courses service as a bioethics restricted elective or a bioethics elective.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and Business Administration (Carnegie Mellon), JD/MBA

The daily interaction of Law and Business in our society presents attorneys, entrepreneurs, and other professionals with a diverse set of challenges arising from public and private institutions, policies, and practices. A joint degree program can provide valuable interdisciplinary skills to tackle these challenges. To prepare the next generation of leaders, the University of Pittsburgh School of Law offers an outstanding joint degree program in Law and Business with a unique option.

Students may combine a Juris Doctor (JD) degree with a Master in Business Administration (MBA) from Carnegie Mellon University Tepper School of Business, which is in the top 20 of all U.S. business schools according to the the U.S. News rankings. The JD/MBA program enables students to
receive integrated training in Law and Business while reducing the amount of time ordinarily necessary to earn the two degrees from five years to four years.

Requirements

Students in the JD/MBA program complete the joint degree in either eight (8), nine (9), or ten (10) semesters. During the first four (4) semesters of the program, students must enroll full-time for one (1) entire year at the School of Law and for one (1) entire year at the appropriate School of Business. Students have an option of enrolling either at the School of Law or the School of Business for the first-year of the program. During the third- and fourth-years of the program students enroll in courses at both schools, subject only to availability and each school’s respective upper-level requirements. To graduate from the Law School, students in the JD/MBA program must have five semesters of full-time enrollment (minimum of 10 credits per semester) at the Law School (rather than the six that is normally required).

School of Law

Details about the first-year program at the School of Law can be found on the First-Year Curriculum page. A full listing of the requirements for graduation from the University of Pittsburgh School of Law can be found on the Graduation Requirements page.

Tepper School of Business

To graduate with a JD/Tepper MBA degree students must acquire a total 88 credits from the School of Law and 64 credits (or 192 units) from Tepper. However, completing the MBA degree entitles the student to 15 credits of advanced standing at the School of Law, resulting in an actual total of 73 credits; and completing the JD degree entitles the student to 10 credits (or 30 units) at Tepper, resulting in an actual total of 54 credits (or 162 units). This means that, after a year at the School of Law and a year at Tepper, a student must acquire at least 40 additional credits from the School of Law and 22 credits (or 66 units) in electives from Tepper to graduate with a JD/MBA.

More information can be found on their website.

For Students Interested in Practicing in New York

Please be advised that students who wish to be admitted to practice in New York should not enroll in a joint degree program that entitles the student to more than 12 credits of advance standing at the Law School (i.e., the JD/MBA with the Tepper School of Business). See New York Rules of Court § 520.3(c)(5).

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and Business Administration, JD/MBA

The daily interaction of Law and Business in our society presents attorneys, entrepreneurs, and other professionals with a diverse set of challenges arising from public and private institutions, policies, and practices. A joint degree program can provide valuable interdisciplinary skills to tackle these challenges. To prepare the next generation of leaders, the University of Pittsburgh School of Law offers an outstanding joint degree program in Law and Business with a unique option.

Students may combine a Juris Doctor (JD) degree with a Master in Business Administration (MBA) from the University of Pittsburgh Katz Graduate School of Business, which is in the top 30 of U.S. public business schools according to the U.S. News rankings. The JD/MBA program enables students to receive integrated training in Law and Business while reducing the amount of time ordinarily necessary to earn the two degrees from five years to four years.
Requirements

Students in the JD/MBA program complete the joint degree in either eight (8), nine (9), or ten (10) semesters. During the first four (4) semesters of the program, students must enroll full-time for one (1) entire year at the School of Law and for one (1) entire year at the appropriate School of Business. Students have an option of enrolling either at the School of Law or the School of Business for the first-year of the program. During the third- and fourth-years of the program students enroll in courses at both schools, subject only to availability and each school's respective upper-level requirements. To graduate from the Law School, students in the JD/MBA program must have five semesters of full-time enrollment (minimum of 10 credits per semester) at the Law School (rather than the six that is normally required).

School of Law

Details about the first-year program at the School of Law can be found on the First-Year Curriculum page. A full listing of the requirements for graduation from the University of Pittsburgh School of Law can be found on the Graduation Requirements page.

Katz School of Business

To graduate with a JD/Katz MBA degree students must acquire a total of 76 credits from the School of Law and 39 credits from Katz. This means that, after a year at the School of Law and a year at Katz, a student must normally acquire at least 43 additional credits from the School of Law and 3 credits from Katz to graduate with a JD/MBA.

More information can be found on their website.

For Students Interested in Practicing in New York

Please be advised that students who wish to be admitted to practice in New York should not enroll in a joint degree program that entitles the student to more than 12 credits of advance standing at the Law School (i.e., the JD/MBA with the Tepper School of Business). See New York Rules of Court § 520.3(c)(5).

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and Information Security Policy (Carnegie Mellon), JD/MSISPM

Building on their longstanding and successful partnership, the University of Pittsburgh School of Law and Heinz College offer a joint degree program designed to train students for careers in which management, information security, and law overlap. This joint degree offering is particularly beneficial to many students' careers because legal considerations affect many management and policy decisions, and the practice of law is enhanced by a clear understanding of the policy and security concerns facing the public, private, and nonprofit sectors. Participants in the program will emerge with a broad knowledge of the fundamental intersections of law, government, privacy and information security, and management. The fields of cybersecurity, information privacy, intellectual property law, cybercrime, and other IT-related sectors are growing rapidly. There are many job opportunities in this emerging space. Many of those jobs have legal dimensions and will be filled by people with legal training. Graduates of the joint degree program will be better prepared to compete for those jobs and to succeed in them because of their broader, interdisciplinary training. Furthermore, the interdisciplinary nature of this program allows for practical skill sets to solve economic and social problems that require technological, managerial, and legal expertise.

The joint-degree program is designed to be completed in eight semesters over four academic years instead of the five years required if pursued separately. Students interested in the joint degree program can pursue both programs simultaneously. During the first year, students study at either the Heinz School or the School of Law, taking the standard first-year curriculum of the respective school. The second year involves full-time study at the other school. For the third and fourth years, students take courses at both schools. In order to graduate with both degrees, students have to fulfill both schools' degree requirements.
Contact Information

University of Pittsburgh School of Law
Office of Admissions
3900 Forbes Avenue
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(412) 648-1413
admitlaw@pitt.edu

Faculty Advisor
David Thaw
Assistant Professor of Law
University of Pittsburgh School of Law
3900 Forbes Avenue
Pittsburgh, PA 15260
(412) 648-7855
dbthaw@pitt.edu

School of Public Policy & Management at Heinz College, Carnegie Mellon
5000 Forbes Avenue
Pittsburgh, PA 15213
(412) 268-2164
(800) 977-3498
hnzadmit@andrew.cmu.edu

Curriculum & Requirements

The Heinz School of Public Policy and Management and the Law School have different degree requirements. Carnegie Mellon courses are counted in units and University of Pittsburgh courses are counted in credits. A 12-unit course is the equivalent of a 4-credit course. To fulfill the program requirements for the Law School, students have to complete 88 credits while the Heinz School requires 198 units for the MSISPM degree. Students in the joint degree program are able to transfer 30 units to the Heinz School degree after completing their JD degree and 14 credits to the JD degree after completing their MSISPM degree.

Students are required to register for a minimum of one class per semester at Heinz College during years 3 and 4 in order to qualify for the transfer of credits between institutions. A full listing of the requirements for graduation from the University of Pittsburgh School of Law can be found on the Graduation Requirements page.

Before selecting courses for each program, students are required to meet with their Academic Advisors at both programs to map out a course of study. In addition to the course work for both programs, Heinz School students are required to complete a summer internship after their first year at the Heinz School. Students can receive assistance from the Career Services Office in securing an internship.

Since degrees in the joint programs are awarded concurrently, it is important to note that a student who resigns from one program will be subject to all the requirements for graduation from the remaining degree program.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and International Affairs, JD(MPIA)

This program provides rigorous, integrated training for students preparing for a professional career that combines law and public and international affairs. Increasingly, lawyers in the public and nonprofit private sectors work in managerial and policy-making capacities for which legal training alone does not prepare them. At the same time, legal considerations impinge more than ever on the work of public managers and planners, although
most of them have had no exposure to legal training. Students in the joint-degree program gain a broadened knowledge base and a cross disciplinary approach to solving problems involving the intersection of law, policy, and management. They also develop more marketable professional skills than are usually acquired through single-degree programs. Professionals trained in both law and public and international affairs thus enjoy expanded career opportunities. The University of Pittsburgh's program is unique because of the range of master's degree options available.

Students in the MPIA degree program pursue majors in Global Political Economy or Security and Intelligence Studies. Students interested in international development have a choice of two major fields, which include Development Planning and Environmental Sustainability or Non-Governmental Organizations (NGOs) and Civil Society.

Contact

University of Pittsburgh School of Law
Office of Admissions and Financial Aid
3900 Forbes Avenue
Pittsburgh, PA 15260
(412) 648-1413
admitlaw@pitt.edu

Faculty Advisor (JD/MPIA and JD/MID)
Ronald A. Brand
Chancellor Mark A. Nordenberg University Professor
Director, Center for International Legal Education
University of Pittsburgh School of Law
3900 Forbes Avenue
Pittsburgh, PA 15260
(412) 648-1307
rbrand@pitt.edu

University of Pittsburgh Graduate School of Public and International Affairs
3601 Wesley W. Posvar Hall
Pittsburgh, PA 15260
gspia@pitt.edu

Curriculum & Requirements

The structuring of this four-year degree program is flexible. A student may begin study in either school. The only requirement in this connection is that the first year in the School of Law be taken in its entirety, with no outside courses. GSPIA also expects joint-degree program students to complete the required master's degree core courses early in their program in GSPIA.

Degrees in the joint-degree program are awarded concurrently. Therefore, it is important to note that a student who resigns from one program and elects to remain in the other will be subject to all the requirements of that particular degree program. The previously described arrangement for awarding advanced-standing credits will no longer be in effect.

Each student must satisfy both schools' requirements as modified by participation in the joint-degree program. The credit requirements are as follows:

<table>
<thead>
<tr>
<th>Program</th>
<th>Joint Degree Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juris Doctor (JD)</td>
<td>79 Credits</td>
</tr>
<tr>
<td>Master of Public and International Affairs</td>
<td>36 Credits</td>
</tr>
<tr>
<td>Total Credits for Joint Degree</td>
<td>115 Credits</td>
</tr>
</tbody>
</table>
Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and International Development, JD/MID

This program provides rigorous, integrated training for students preparing for a professional career that combines law and public and international affairs. Increasingly, lawyers in the public and nonprofit private sectors work in managerial and policy-making capacities for which legal training alone does not prepare them. At the same time, legal considerations impinge more than ever on the work of public managers and planners, although most of them have had no exposure to legal training. Students in the joint-degree program gain a broadened knowledge base and a cross disciplinary approach to solving problems involving the intersection of law, policy, and management. They also develop more marketable professional skills than are usually acquired through single-degree programs. Professionals trained in both law and public and international affairs thus enjoy expanded career opportunities. The University of Pittsburgh's program is unique because of the range of master's degree options available.

Contact

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Office of Admissions and Financial Aid
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University of Pittsburgh Graduate School of Public and International Affairs
3601 Wesley W. Posvar Hall
Pittsburgh, PA 15260
gspia@pitt.edu

Curriculum & Requirements

The structuring of this four-year degree program is flexible. A student may begin study in either school. The only requirement in this connection is that the first year in the School of Law be taken in its entirety, with no outside courses. GSPIA also expects joint-degree program students to complete the required master's degree core courses early in their program in GSPIA.

Degrees in the joint-degree program are awarded concurrently. Therefore, it is important to note that a student who resigns from one program and elects to remain in the other will be subject to all the requirements of that particular degree program. The previously described arrangement for awarding advanced-standing credits will no longer be in effect.

Each student must satisfy both schools' requirements as modified by participation in the joint-degree program. The credit requirements are as follows:

<table>
<thead>
<tr>
<th>Program</th>
<th>Joint Degree Credits</th>
</tr>
</thead>
</table>
Program | Joint Degree Credits
--- | ---
Juris Doctor (JD) | 79 Credits
Master of International Development | 36 Credits
Total Credits for Joint Degree | 115 Credits

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and Public Administration, JD/MPA

This program provides rigorous, integrated training for students preparing for a professional career that combines law and public and international affairs. Increasingly, lawyers in the public and nonprofit private sectors work in managerial and policy-making capacities for which legal training alone does not prepare them. At the same time, legal considerations impinge more than ever on the work of public managers and planners, although most of them have had no exposure to legal training. Students in the joint-degree program gain a broadened knowledge base and a cross disciplinary approach to solving problems involving the intersection of law, policy, and management. They also develop more marketable professional skills than are usually acquired through single-degree programs. Professionals trained in both law and public and international affairs thus enjoy expanded career opportunities. The University of Pittsburgh's program is unique because of the range of master's degree options available.

The MPA degree offers three fields of study, which includes majors in Urban and Regional Affairs, Public and Nonprofit Management, and Policy Research and Analysis.

Contact

University of Pittsburgh School of Law
Office of Admissions and Financial Aid
3900 Forbes Avenue
Pittsburgh, PA 15260
(412) 648-1413
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Faculty Advisor (JD/MPA)
Elena A. Baylis
Associate Professor of Law
University of Pittsburgh School of Law
3900 Forbes Avenue
Pittsburgh, PA 15260
(412) 867-8690
ebaylis@pitt.edu

University of Pittsburgh Graduate School of Public and International Affairs
3601 Wesley W. Posvar Hall
Pittsburgh, PA 15260
gspia@pitt.edu

Curriculum & Requirements
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Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

**Law and Public Health, JD/MPH**

The Graduate School of Public Health, Health Policy & Management and the School of Law at the University of Pittsburgh offer a cooperative educational program, through which students may earn both the Juris Doctor (JD) degree, the first professional degree in law, and the Master of Public Health (MPH) degree, the primary professional degree in public health. Students have the option of selecting between two areas of concentration pursuing their MPH degree: health policy and management or public health sciences. The joint-degree program has been established in recognition of extensive and increasing connections between law and the broad range of health services, both public and private, in the United States.

The objective of this specialized educational program is to provide graduates with an inter-disciplinary education to prepare them to address issues and situations that affect personal and public health. Graduates of this joint-degree program are academically prepared for the practice of law with private clients, serving as house counsel with health organizations and systems, and as attorneys representing state, county and local health departments. The threat of bioterrorism and the need to balance both individual rights and public protection in establishing public health preparedness has made public health law an even more vital professional focus for attorneys.

**Faculty Advisors**

Elizabeth Van Nostrand, JD  
Visiting Assistant Professor  
University of Pittsburgh Graduate School of Public Health  
Department of Health Policy & Management  
130 DeSoto Street, A734  
Pittsburgh, PA 15261  
schmidte@pitt.edu

Mary Crossley, JD  
Professor of Law  
University of Pittsburgh  
School of Law  
3900 Forbes Avenue  
Pittsburgh, PA 15260
Requirements

Students enrolled in the joint-degree program receive integrated training in law and public health. Students must complete 37 credits in the MPH curriculum, and 8 JD credits will be applied toward the MPH degree in order to meet the required 45 credits for the MPH degree. Students must complete 76 credits in the JD curriculum, and 12 MPH credits will be applied toward the JD degree in order to meet the required 88 credits for the JD degree. The first year of law school must be completed in a single academic year before embarking on studies in public health. Neither degree may be granted prior to the fulfillment of all requirements for the joint-degree program.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and Public Policy and Management (Carnegie Mellon), JD/MSPPM

The University of Pittsburgh School of Law and Heinz College offer a joint-degree program designed to train students for careers in which management, public policy and law overlap. A successful partnership that has been in existence for over a decade, this program offers students a comprehensive education that marries the analytic and quantitative strength of the Heinz School with the rigorous legal training afforded by the School of Law. This joint degree offering is particularly beneficial to many students' careers since legal considerations affect many public management and policy decisions, and the practice of law is enhanced by a clear understanding of public policy and management concerns. Participants of the program emerge with a broad knowledge of the fundamental intersections of law, government, policy analysis and management. Furthermore, the interdisciplinary nature of this program allows for practical skill sets to solve economic and social problems that require technological, managerial, and legal expertise.

The joint-degree program is designed to be completed in eight semesters over four academic years instead of the five years required if pursued separately. Students interested in the joint degree program can pursue both programs simultaneously. During the first year, students study at either the Heinz School or the School of Law, taking the standard first-year curriculum of the respective school. The second year involves full-time study at the other school. For the third and fourth years, students take courses at both schools. In order to graduate with both degrees, students have to fulfill both schools' degree requirements.

CONTACT INFORMATION

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Faculty Advisor
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(412) 648-7855
madison@pitt.edu
Curriculum & Requirements

The Heinz School of Public Policy and Management and the Law School have different degree requirements. Carnegie Mellon courses are counted in units and University of Pittsburgh courses are counted in credits. A 12-unit course is the equivalent of a 4-credit course. To fulfill the program requirements for the Law School, students have to complete 88 credits while the Heinz School requires 198 units for the MSPPM degree. Students in the joint degree program are able to transfer 30 units to the Heinz School degree after completing their JD degree and 14 credits to the JD degree after completing their MSPPM degree.

Students are required to register for a minimum of one class per semester at Heinz College during years 3 and 4 in order to qualify for the transfer of credits between institutions. A full listing of the requirements for graduation from the University of Pittsburgh School of Law can be found on the Graduation Requirements page.

Before selecting courses for each program, students are required to meet with their Academic Advisors at both programs to map out a course of study. In addition to the course work for both programs, Heinz School students are required to complete a summer internship after their first year at the Heinz School. Students can receive assistance from the Career Services Office in securing an internship.

Since degrees in the joint programs are awarded concurrently, it is important to note that a student who resigns from one program will be subject to all the requirements for graduation from the remaining degree program.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law and Social Work, JD/MSW

The School of Social Work (SSW) and the School of Law offer a cooperative educational program through which students may earn both the Master of Social Work (MSW), the primary professional degree in social work, and the Juris Doctor (JD) degree, the first professional degree in law. The MSW-JD program will enable students with interests in a wide range of areas where law and social work converge - such as child welfare, aging, health, mental health, juvenile and criminal justice, family issues, and housing - to engage in a highly integrative educational experience that will include academic courses, field placements, and research opportunities at the intersection of both professions. The joint degree program allows one to earn both degrees in four years rather than five.

Increasingly, social work professionals and attorneys are working together to promote the well-being of their clients. These areas of convergence exist in practice with individuals, families, and groups as well as with communities and organizations. The intersection of legal and social work concerns is also evident at the policy level, and research from both professional disciplines has been used to inform these activities. It is not uncommon for practitioners from both fields to work in concert to draft, implement, and/or advocate for legislation at the local, state, and federal levels.

The MSW-JD program is one among several programs that the Schools of Social Work and Law have jointly established throughout their long and rich history of collaboration.

Faculty Advisors

University of Pittsburgh School of Law
Professor Kevin Deasy, MSW, JD
3900 Forbes Avenue
Requirements

Students enrolled in the joint degree program will receive integrated training in social work and law over a four year period. The combined credit-hour requirements for the MSW and JD degrees obtained separately is 148 credits (60 for the MSW, usually completed in four full-time semesters, and 88 for the JD, usually completed in six full-time semesters). In the joint degree program, the two degrees are awarded for a combined total of 121 credits (46 in Social Work and 75 in Law). This reduction in credit-hour requirements is achieved through the acceptance of up to 14 credit hours of JD course work receiving a grade of C or higher toward the MSW degree and the acceptance of up to 13 credit hours of MSW work receiving a grade of B or higher toward the JD degree. All didactic foundation SW courses must be completed in a single academic year; likewise, all first-year JD courses must be completed in a single academic year. Neither degree may be granted prior to the fulfillment of all requirements for the joint degree program.

For Students Interested in Practicing in New York

Please be advised that students who wish to be admitted to practice in New York should not enroll in a joint degree program that entitles the student to more than 12 credits of advance standing at the Law School (i.e., the JD/MSW with the School of Social Work). See New York Rules of Court § 520(c)(5).

Integrative seminar

All students must complete an Integrative Seminar, to be jointly presented by the School of Social Work and Law School, during each Fall and Spring semester of their enrollment in the MSW-JD program. The integrative seminar will meet twice each Fall and Spring semester. The goal of the seminar will be to allow students the space to discuss issues related to integration and to listen to and have a dialogue with outside speakers who have integrated law and social work in their practice, research, and/or teaching.

Required electives in the Law School

Students must complete at least 2 courses from the Law School menu of MSW-JD "required electives."

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law - Foreign Law Graduates, LLM

The Master of Laws (LLM) degree provides foreign law graduates with critical training in the common law legal tradition and the U.S. legal system during an academic year at the University of Pittsburgh, located in Pittsburgh's vibrant Oakland neighborhood. Pitt Law's LLM program provides lawyers who have completed their law degree outside the United States with an opportunity to study the common law legal tradition and the U.S. legal system in the United States.
Degree Requirements

Students must complete a minimum of 24 credits to graduate. The program is completed in one academic year from August to May. Part-time admission is considered on a case-by-case basis. The CILE Academic Director, Executive Director and Program Administrator take an active role in personally counselling each LLM student on their course choices, helping you to plan a course of study that is uniquely tailored to your personal needs. Courses taken must include:

- LAW 5977 - INTRODUCTION TO AMERICAN LAW
- LAW 5813 - U.S. LEGAL ANALYSIS & WRITING
- LAW 5820 - LL.M COLLOQUIUM

Writing Requirement - Choose one of the following:
- LAW 5902 - INDEPENDENT STUDY
or a Seminar Course (Usually 3 credits-various courses are offered each semester). In seminars, the class will meet once a week for two hours with the guidance of a faculty member. The students will conduct research on the seminar topic and prepare drafts of their paper throughout the semester. Each student will present their paper in class and submit a final paper at the end of the semester.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law - Master of Studies in Law (MSL)

The Master of Studies in Law at the University of Pittsburgh School of Law is a 30-credit advanced degree designed for graduates and mid-career professionals seeking to enhance their careers with a versatile alternative to the traditional three-year Juris Doctor degree. The MSL degree can be earned in one academic year (August to May) full-time or two to four years in a flexible part-time schedule.

MSL scholars seek to gain foundational and specialized knowledge of laws and legal systems. Law is a pervasive influence on almost all aspects of life across the globe, but higher education often ill-prepares students and professionals for navigating laws and legal dynamics in business and life. The MSL degree addresses this critical knowledge gap.

Pitt Law commands one of the oldest Master of Studies in Law programs in the country. Only a handful of students are admitted per year. Pitt Law is unique in that it offers its MSL students the opportunity for specialization in 22 areas of studies.

This is not an online program. MSL students take the same vast array of courses as Juris Doctor candidates taught by world-class legal scholars, judges and attorneys, and they gain the advantages and benefits of attending the University of Pittsburgh.

Degree Requirements

Pitt Law's Master of Studies in Law is a graduate-level advanced degree from the University of Pittsburgh. Those applying must have completed at least an undergraduate bachelor of arts or sciences degree. Those desiring to apply to the Master of Studies in Law program will need to provide official transcripts of all college, graduate and professional studies, whether a degree was obtained or not.

International students are welcome and encouraged to apply. They must have completed the equivalent of a US bachelor of arts or sciences degree, and they must submit a TOEFL score. The minimum acceptable TOEFL scores are 600 paper, 250 computer, 110 internet. IELTS scores are also accepted in lieu of TOEFL. International students are encouraged to apply as early as possible because of greater amount of time needed to process the application, obtain visas, and obtain housing.

Students must complete 30 course credits in the School of Law to receive the MSL degree. Students are required to take Introduction to Law and Legal Reasoning, one first-year course, and a minimum of 12 credits in their selected area of specialization.

The areas of specialization from which students may choose are as follows:
Students may also design their own unique concentration.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law - Juris Doctor (JD)

Pitt Law offers the Juris Doctor (JD) degree as well as a number of joint degree programs with other Pitt schools, which lead to both a JD and a second master's degree.

In all of these programs, Pitt Law's essential mission is to help lawyers and legal institutions to meet the demands of a rapidly changing legal and professional environment.

The program's first-year curriculum offers a solid foundation in legal analysis and reasoning through courses in subject areas traditionally viewed as basic for legal education.

Pitt Law JD students enjoy a large degree of latitude in designing courses of study that meet their individual goals and interests, with only a handful of graduation requirements beyond the first year.

Pitt Law offers particularly rich opportunities in:

- International law, featuring prominent international/comparative law faculty, a rich international and comparative law curriculum, several courses each year taught by visiting foreign law professors, internships abroad, internationally focused scholarships and fellowships, Languages for Lawyers courses, strong University programs (including area studies certificate programs), and international moot law competitions.
- "Live-client" clinics in a range of substantive areas and practice settings, giving students opportunities to develop valuable lawyering skills in the context of real-life, not simulated, legal disputes and transactions. Students grapple with legal, ethical, and practical issues, under the supervision of - and in close counsel with - a seasoned attorney faculty member.
- The Semester in D.C. Program, during which students spend a semester in Washington, D.C., earning a full semester's worth of academic credit while working full-time as an extern with a non-profit organization or government agency.
Seven certificate programs/areas of concentration enabling students to concentrate their studies in particular areas of law. These programs include specialized advanced courses that incorporate lawyering skills relevant to particular areas of practice.

Cross-disciplinary learning - Pitt Law students may take courses in other schools at Pitt or other local colleges and universities (up to six non-law graduate credits can be used toward the JD requirements).

Some Pitt Law courses incorporate multiple disciplines, such as Law & Human Behavior and Law & Economics Seminar, or are jointly taught by law faculty and faculty from other disciplines to classes comprising both law and other graduate/professional students - for example, Commercializing New Technologies.

Pitt Law joint degree programs enable students to earn the JD as well as a master's degree in another discipline through an integrated program, more quickly than earning the two degrees separately.

Degree Requirements

Admission applications for the Pitt Law JD program will be accepted starting September 1 through our deadline of April 1. Applications are considered only for the current year for the fall semester. We require all applicants submit their applications on-line through the Law School Admission Council (LSAC). Pitt Law is highly competitive and decisions are based upon many factors. Once your application is complete, our Admissions Committee will review your application. Once we are able to make a decision, you will be notified by mail within several weeks. You can also verify your application status on-line with a user name and password, which will be sent to you electronically once you apply. We ask for your patience during the admissions cycle as it can become very busy during key times of the year.

Application Requirements:

- Applicants must submit a $65 application fee
- Applicants must have completed a bachelor's degree from a regionally accredited college or university in the United States before the first day of law school.
- In cases where an applicant has completed studies outside the United States, the requirement is education deemed by the University of Pittsburgh to be comparable to a bachelor's degree from a regionally accredited college or university in the United States. Click here for more information
- When evaluating an undergraduate degree, the committee pays careful attention to the strength of the major field of study, as evidenced by the courses listed on the undergraduate transcript. Pitt Law is looking for applicants who have demonstrated the discipline and ability to handle a rigorous and demanding program. The admissions committee carefully evaluates graduate work and professional experience, although utilizes the undergraduate GPA.
- Applicants are required to register with the Credential Assembly Service (CAS) through LSAC and must take the LSAT. If an applicant takes the LSAT more than one time the highest score is considered by the admissions committee when making a decision. The latest test score that will be considered for all entrance is the score from the previous February examination. Scores from tests taken more than four years prior to the current admissions year will not be considered. More information can be obtained from the Law School Admission Council (LSAC).
- A required personal statement gives the committee a view into the non-academic world of the applicant and serves as the interview. This is critical in our ability to enroll a diverse class. We ask that you keep your personal statement to no more than two pages, typed, double spaced.
- Letters of recommendation play an equally important role in this process as they can reveal the strengths of the academic achievements of the applicant. We recommend three letters, although none are required. Letters should be submitted through the LSAC letter of recommendation service.
- We encourage applicants to submit a Resume, as they highlight for the admissions committee a broader view of your achievements.
- In addition to a bar examination, there are character, fitness, and other qualifications for admission to the bar in every U.S. jurisdiction. Applicants are encouraged to determine the requirements for any jurisdiction in which they intend to seek admission by contacting the jurisdiction. Addresses for all relevant agencies are available through the National Conference of Bar Examiners.

In order to graduate, a student pursuing a JD must complete 88 credits, including the following:

- A prescribed first-year curriculum (Contracts, Criminal Law, Legislation and Regulation, Torts, Civil Procedure, Constitutional Law, Lawyering (not applicable to students entering in the Fall 2013 or 2014), Property, and Legal Analysis and Writing as well as attendance at a minimum of six programs in the Pitt Law Academy speaker series)
- The upper-level writing requirement
- A course in Legal Profession
- Two credits in a course designated as satisfying the professional skills requirement
- The one-credit Foundations of Legal Research course
• A course designated as satisfying the international/comparative law requirement
• A course designated as satisfying the writing ("W") requirement

Additional graduation requirements apply for those students whose grade point averages place them in the bottom 15% of their class at the end of their first or second year. The upper-level writing requirement and other academic requirements are described in the Academic Rules and Graduation sections of the School of Law's website.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School website.

First-Year Curriculum

The first-year curriculum is comprised of the following required courses, as well as attendance at a minimum of 6 programs in the Pitt Law Academy:

**Fall:**
- LAW 5020 - CONTRACTS
- LAW 5046 - CRIMINAL LAW
- LAW 5720 - LEGAL ANALYSIS AND WRITING
- LAW 5032 - LEGISLATION AND REGULATION
- LAW 5028 - TORTS

**Spring:**
- LAW 5033 - CIVIL PROCEDURE
- LAW 5076 - LEGAL ANALYSIS AND WRITING
- LAW 5024 - PROPERTY

**Year Long Program**
- LAW 5061 - PITT LAW ACADEMY

**Law - Certificate in Disability Legal Studies**

The law exerts a powerful and direct impact on the lives of persons with disabilities. It is estimated that close to 20 percent of the US population, nearly 54 million people, have a disability, with a dramatic increase in the proportion since 1970. People with disabilities comprise one of the largest, least employed, and most disenfranchised minority groups in society.

This 15-credit certificate program is a unique effort to provide legal education to those working in the administration of and provision of services in disabilities programs. Administrators, educators, health practitioners, advocates, social workers, architects, city planners, attorneys, and business leaders, among others, could potentially benefit from the program's instructional content.

**Requirements**

Students enrolled in the certificate program are required to take four core courses.

• LAW 2814 - INTRODUCTION LAW AND LEGAL REASONING
• LAW 5395 - HEALTH LAW AND POLICY
• LAW 5339 - LAW OF DISABILITY DISCRIMINATION
• LAW 5028 - TORTS

Or another first-semester required course if the Certificate Director deems it preferable for a particular student's interest.

The remaining 3 credits (minimum) may be satisfied by any of the following (or similar) courses which are offered as instructor availability permits:

• LAW 5464 - BIOETHICS AND LAW
• LAW 5347 - ELDER LAW

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In addition, students may select any other School of Law course with the permission of the instructor and the Certificate Director.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law - Environmental and Energy Law Programs

The School of Law is currently in the process of transitioning its longstanding Environmental Law, Science & Policy Certificate Program into a new Energy & Environmental Law Area of Concentration:

Students who were admitted with the Class of 2016 or earlier classes can choose either to pursue the Certificate or the Area of Concentration. Whichever choice a student makes, the student must register for, and complete the requirements of, the chosen program in order to have completion of that program reflected on their transcripts.

Students who are admitted with the Class of 2017 or later classes may only enroll in the Area of Concentration.

The law around the development, sale, use and preservation of natural resources is the practice framework for energy and environmental lawyers. Pitt Law offers a flexible concentration that allows students to pursue transactional, regulatory, litigation, or policy-based courses in the area of energy & environmental law. Students pursuing this concentration may explore the law of shale plays, utility law, international commercial transactions, pollution control laws, conservation statutes, renewable energy incentives, and climate law and policy.

Energy and environmental law is often practiced in or through interactions with administrative agencies and tribunals. The Concentration exposes students to administrative decisionmaking, statutory interpretation, rulemaking and adjudication, and judicial review of agency decisions.

Area of Concentration

All students must follow the JD degree requirements in order to graduate. To qualify for this concentration, students may pursue this concentration by taking foundational courses in environmental or energy law, 5-6 credits of electives, and 4-6 skills-based credits.

Please note that this program may require that you complete an internship, externship, or other field work at a facility or facilities external to the University and that such facility or facilities may require a criminal background check, an Act 33/34 clearance (if applicable), and perhaps a drug screen to determine whether you are qualified to participate.

**LAW 5340 - ENVIRONMENTAL LAW**
**LAW 5038 - ENERGY LAW AND REGULATION**

**Elective Courses (5-6 credits required)**
- **LAW 5201 - ADMINISTRATIVE LAW**
- **LAW 5082 - CLIMATE CHANGE AND THE LAW**
- **LAW 5295 - EXPERT WITNESS**
- **LAW 5919 - PGH JOURNAL TECH LAW & POLICY**
- **LAW 5143 - WATER & SHALE GAS DEVELOPMENT**

Energy & Environment
International Energy Transactions
* may be alternately used as a Skills Component

**Skills Component (4-6 credits required)**
- **LAW 5883 - ENVIRONMENTAL LAW CLINIC**
Environmental Moot Court Competition
Energy Law Moot Court Competition
Externship in the area of Environmental Law or Energy Law

- LAW 5955 - D.C. EXTERNSHIP

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law - Health Care Compliance Online Graduate Certificate Program

The Health Care Compliance Graduate Certificate Program is a fully online, accelerated 10-month graduate certificate program designed for working professionals. This advanced, accelerated program will support you as you take on more strategic compliance roles. In this program, you will:

- Learn the relevant law, practical applications of compliance, best practices and explore current issues;
- Interact with expert faculty-professors from the School of Law and Graduate School of Public Health, current and former federal regulators, and compliance industry experts;
- Network and collaborate with your peers in other industries and locations through innovative online applications; and
- Work on weekly assignments when and where you choose.

This program is designed for:

- Compliance professionals who wish to enhance their understanding and professional development;
- Attorneys who wish to acquire an appreciation of the compliance industry, client needs, and issues;
- Health care professionals who must understand compliance;
- Industry administrators and leaders; and/or
- Those interested in an exciting career change.

HCC Online course work is asynchronous, meaning there are no scheduled meeting times or locations. You will complete each course in the program within eight weeks, working through weekly modules, based on your own schedule and from any location.

The objectives of the Health Care Compliance Online program are to:

- Provide an understanding of the laws that shape the health care industry in general, and compliance in particular;
- Help students acquire a deeper understanding of the regulatory context of compliance;
- Help students develop the skills and knowledge necessary to identify compliance issues, guide change, and navigate complexity while supporting an ethical culture;
- Identify best practices in compliance management;
- Enhance critical thinking and problem solving skills in a compliance context;
- Help students acquire knowledge and skills to manage conflict;
- Improve students' communication and presentation skills; and
- Facilitate peer-to-peer learning and networking opportunities.

Requirements

Applicants must have earned a baccalaureate degree at an accredited institution. Admissions decisions will be made based on professional experience, academic credentials, and a personal statement. In some instances an interview (online or via phone) may be required.

To apply for the program, complete the Health Care Compliance Online Application available at Pitt Online's website.

Note: Please visit the Pitt Online State Authorization page to be sure your state is authorized to enroll students online. Currently, pursuant to state laws and regulations, online programs at the School of Law are authorized to enroll students from all states with the exception of: Arkansas, Kentucky, Minnesota, Missouri, Oregon, Washington State. Maryland Residents: the University of Pittsburgh is registered with the Maryland Higher Education Commission.
Law - Health Law Certificate

Students enrolled in a degree program at the University of Pittsburgh School of Law can develop an expertise in the rapidly changing, steadily growing field of health law through the Law School's new Health Law Certificate Program.

Pitt Law's Health Law Program, one of the oldest in the country, is intended to give students interested in health law a basic grounding in the field, complemented by clinical experience and more in-depth study of advanced topics and closely related areas of law. Students are encouraged to obtain the same broad background in law expected of all graduates for the University of Pittsburgh School of Law.

The health care industry comprises more than one-sixth of the entire economy—larger even than the automobile industry. It is also a large consumer of legal services. Law firms ranging from the largest to the smallest provide legal services to hospitals, health insurance companies, nursing homes, physicians' practices, home health agencies, and pharmaceutical and device manufacturers, to name some of the more prominent. In addition, many federal and state agencies and many of the larger providers of health care goods and services employ a large number of lawyers in house. Although there are a few areas that are substantively unique—such as Medicare and Medicaid reimbursement, certificate of need requirements, and fraud and abuse prohibitions—much of health law involves the application of other areas of law, such as corporate law, employment law, and real estate law to the health care industry's special circumstances.

The Health Law Program provides students with a strong foundation in health law that will enable them to practice in a variety of contexts, including law firms, health care management firms and insurers, government, and health care institutions. A combination of classroom and skills components acquaints students with everything from complex business and legal transactions, to bioethics and patient care issues, to the variety of legal issues that arise in the operation of a health care institution. Students gain hands-on experience in these areas through their work in the Law School's clinics and practicums, and in externships and summer jobs available in the health care setting.

In addition to courses taught by regular law school faculty, leading practitioners in various fields of health law such as fraud and abuse, business transactions, compliance, disabilities law, nonprofit organizations, and privacy teach courses designed to relate theory to practice. In addition, Current Issues in Health Law, a required course for all Health Law Certificate Program students, is taught by renowned practitioners of health law and by health care professionals and executives.

Requirements

The Health Law Certificate Program is an educational program of concentration in health law for students in their second and third years of the JD curriculum. Admission is available to all students entering their second year in the JD program.

Students must complete the following requirements to receive a Certificate in Health Law:

- Complete a minimum of 18 credits in courses in health law, including Health Law and Policy, Current Issues in Health Law I and II, and Business Organizations
- Write their faculty-supervised paper on a topic in health law
- Complete a clinic, externship, or practicum
- Take a minimum of three health law electives

All Pitt Law students may take a maximum of 6 credits of graduate level courses outside the School of Law for credit toward the Health Law Certificate Program with permission of the program director. Courses that are especially relevant are those offered by the Department of Health Services Administration in the Graduate School of Public Health, the Center for Bioethics and Health Law, and the Heinz School of Public Policy and Management at Carnegie-Mellon University. See http://my.pitt.edu, PeopleSoft, Self-Service, Browse Catalog for a listing of all Pitt courses. For advice about taking courses outside the law school, you may wish to consult the Health Law Certificate Program Director.

In addition to the courses below, you may also choose an Upper Level Writing Requirement course as an elective. Your paper must be on a topic in health law; however, the course or seminar in which it is written need not be a health law course. For more information, consult the program director.
Foundational Courses

- LAW 5731 - CURRENT ISSUES IN HEALTH LAW
- LAW 5395 - HEALTH LAW AND POLICY

Core Elective Courses (register for at least 2 courses)

- LAW 5464 - BIOETHICS AND LAW
- LAW 5811 - HLTH CARE BUS TRANSACTIONS *
- LAW 5284 - HEALTH CARE COMPLIANCE *
- LAW 5089 - PUBLIC HEALTH LAW *

Skills Course (register for at least 2 credits)

- LAW 5393 - HEALTH LAW CLINIC
- LAW 5972 - EXTERNSHIP

(in Health)

- LAW 5497 - HEALTH LAW PRACTICUM: ADR
- LAW 5538 - MEDICARE & MEDICAID PRACTICUM

Health Care Transactional Competition

- LAW 5955 - D.C. EXTERNSHIP
- LAW 5875 - SOCIAL SECURITY DISABILITY PRACTICUM
- LAW 5973 - VETERAN'S PRACTICUM
- LAW 5251 - BIOTECHNOLOGY LAW
- LAW 5212 - BUS PLANNING, ENTREP & TECHN
- LAW 5135 - COMMERCIALIZING NEW TECS
- LAW 5347 - ELDER LAW
- LAW 5330 - EMPLOYEE BENEFITS

Federalism & Health Policy Seminar (5503)

- LAW 5300 - FOOD AND DRUG LAW
- LAW 5408 - HEALTH CARE FRAUD AND ABUSE
- LAW 5430 - INFO PRIVACY LAW AND PRACTICE
- HPM 2133 - LAW IN PUBLIC HEALTH PRACTICE

Law in Public Health Practicum (GSPH)

- LAW 5339 - LAW OF DISABLTY DISCRIMINATION
- LAW 5355 - NON-PROFIT ORGANIZATIONS
- LAW 5313 - REPRDCTV LAW & POLICY

* This course may be used to satisfy the Additional Electives requirement or the Core Elective requirement, but not both.

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

**Law - Holocaust and Crimes Against Humanity Studies Emphasis**

The Holocaust was the pivotal cause of the transformation of international law from a law of states that excluded individuals as subjects, to a system that henceforth included individuals as subjects. Among the post-war documents it spawned are the Universal Declaration of Human Rights and the European Convention on Human Rights. Drenched not just in blood but also in law, or the mimicry of law, the Holocaust also was the epitome of the interdisciplinary event that cannot be studied effectively from a single field. Conversely, modern international law cannot be understood without an understanding of the Holocaust.

From the Nuremberg trials to the trials of accused concentration camp guards currently taking place, to civil restitution lawsuits, to narratives of memory and the emerging scholarship on collective and cultural memory, the Holocaust poses a critical backdrop for comparison and contrast with subsequent mass crimes throughout the world, and the social, legal and political resolutions that follow in their wake. Issues meriting study include
the appropriate role of law; the limits of both law and justice in the aftermath of crimes against humanity; law's intersection with history; historical justice; individual, collective and cultural memory; and narrative.

This emphasis will allow law students to examine these issues in any appropriate discipline, including but not limited to Law, Political Science, History, Jewish Studies and Literature. Courses dealing with subjects such as international human rights; slavery; the Rwandan genocide and the history of the Holocaust are examples of those which would qualify.

Requirements

Students must complete eight credits, two of which can be in satisfaction of the upper-level writing requirement. Up to four credits can be taken outside of the Law School. (Any non-Law School credits will be part of the total of six non-Law School credits students may apply to their J.D. degrees).

Completion of the emphasis requirements will be acknowledged in an official Law School letter to the student, a copy of which will be kept in the student's file. The Studies Emphasis is not at present an official university program, and as such will not be reflected on the student's university transcript. However, it is expected that students will want to include reference to their successful completion of this course of studies on their résumés. The Law School will confirm the student's completion of the course of studies to potential employers and others.

- LAW 5653 - INTERNATIONAL HUMAN RIGHTS
- AFRCNA 1039 - HISTORY OF CARIBBEAN SLAVERY
- AFRCNA 0385 - CARIBBEAN HISTORY
- HIST 1338 - WEIMAR AND NAZI GERMANY
- HIST 1367 - 20TH CENTURY EUROPE
- HIST 1381 - EUROPE 1914-1945
- HIST 1769 - HISTORY OF THE HOLOCAUST
- PIA 2359 - CIVIL WAR & CONFLICT RESOLUTION
- PIA 2324 - PEACEMAKING AND PEACEKEEPING
- PIA 2307 - HUMAN SECURITY
- PIA 2742 - HUMANITARIAN CRISIS
- PIA 2355 - WWII, THE COLD WAR, AND THEIR IMPACT ON DEVELOPING NATIONS

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law - Intellectual Property, Technology & Innovation Law

The School of Law is transitioning its longstanding Intellectual Property & Technology Law Certificate Program into a new Intellectual Property & Innovation Law Area of Concentration:

Students who were admitted with the Class of 2017 or earlier classes can choose to pursue either the Certificate or the Area of Concentration. Whichever choice a student makes, the student must register for, and complete the requirements of, the chosen program in order to have completion of that program reflected on their transcripts.

Students who are admitted with the Class of 2018 or later classes may only enroll in the Area of Concentration.

The Intellectual Property and Innovation Law Area of Concentration is designed to allow students to obtain a focused introduction to these bodies of law and practice while simultaneously getting a broad grounding in modern law practice generally. No scientific or technical background is required to pursue the Area of Concentration or to practice law in any of the related fields, though students who wish to practice law as a patent prosecutor do need to have an engineering degree or other, similar technical qualification.

Certificate Requirements
All students must follow the JD degree requirements in order to graduate. To qualify for this concentration, students must have a minimum of 14 credits and meet the below course requirements. In addition, students can opt to use one of the following as a Skills Component:

- Giles Sutherland Rich Moot Court Competition
- Cardozo/BMI Moot Court Competition
- Externships with government agencies or other organizations that focus on intellectual property and/or technology law, practice, and/or policy
- Semester in DC externship with a focus on intellectual property and/or technology law, practice, and/or policy.

**Foundational Courses (2 courses totaling 5-6 credits required)**

- LAW 5260 - INTELLECTUAL PROPERTY
- LAW 5328 - COPYRIGHT *
- LAW 5694 - TRADE MARK LAW *

* may be taken as elective if not taken as a foundational

**Elective Courses (5-6 credits required)**

- LAW 5895 - ARTIFICIAL INTEL & LGL RES SEM
- LAW 5251 - BIOTECHNOLOGY LAW
- LAW 5212 - BUS PLANNING, ENTREP & TECHN
- LAW 5620 - CYBERSECURITY & PRIVACY REGLN
- LAW 5404 - CYBERSPACE AND THE LAW
- LAW 5862 - FDS INTELCL PROPERTY LAW SEM
- LAW 5547 - INT'L INTELLECTUAL PROPRTY LAW
- LAW 5631 - LAW AND ENTREPRENEURSHIP
- LAW 5717 - TELECOMMUNICATIONS LAW
- LAW 5984 - TRADE SECRETS LAW

**Skills Component (4-6 credits required)**

- LAW 5135 - COMMERCIALIZING NEW TECS
- LAW 5481 - INTELLCTL PROPERTY LICENSING
- LAW 5839 - LAW ENTRTAINMNT SCL ENTRP PRAC
- LAW 5242 - PATENT LAW PRACTICE
- LAW 5276 - PATENT LITIGATION
- LAW 5695 - TRADEMARK LAW PRACTICE

**Note**

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

**Law - International and Comparative Law Certificate**

The International & Comparative Law Certificate program is intended to provide a foundation for careers and further study in the application of legal regimes to transnational and international relationships. Students should keep in mind that in order to be a good international or comparative lawyer, one must first be a good domestic lawyer. Thus, students in the certificate program are expected and encouraged to obtain the same broad background in law expected of all graduates of the University of Pittsburgh School of Law.

**Requirements**

To receive the International & Comparative Law Certificate upon graduation, students must complete:

- the required courses (below);
- satisfy the Upper Level Writing Requirement (ULW) with a paper focused on international or comparative law content;
• complete twelve credits of elective courses (below);
• and attend two designated CILE programs in each of the candidate's 2L and 3L years at the School of Law.

The courses that qualify as international and comparative law electives for purposes of the Certificate requirements are determined annually. In general, a course will satisfy the elective requirement if at least 25 percent of its content is in the areas of international or comparative law. Listed below are courses offered in recent years that have satisfied this elective requirement - you should consult the schedule of courses for any given term to determine what courses are being offered and the credits awarded. For new course offerings, you should contact CILE to determine if a given course will satisfy the elective requirement. Courses in the School of Law that do not have a predominantly international or comparative law subject matter may be approved for elective purposes on a case-by-case basis at the discretion of the CILE Academic Director if, in practice, the student's work in the class included that element in a particularly substantial manner; for example, the student satisfies the written requirement of a “W” course with a paper using a comparative law approach. (Note this would not be permitted if the given paper was also being used to satisfy the ULW requirement.)

Coursework outside the School of Law may also be eligible to satisfy up to 3 elective credits if the CILE Academic Director determines that at least 25 percent of its content is in international topics, that it otherwise is an appropriate course for these purposes, and the use of these credits has been approved by the Associate Dean of the School of Law as qualifying under School policy for the six credits of non-School of Law coursework permitted to be credited towards the JD degree. Proposed elective courses outside the School of Law must be approved in advance by the CILE Academic Director as well as in accordance with general School of Law policies.

Required Courses
• LAW 5226 - INTERNATIONAL LAW
• LAW 5225 - INTERNATNL BUSINESS TRANSACTNS

Example Electives
• LAW 5618 - ARABIC FOR LAWYERS 1
• LAW 5619 - ARABIC FOR LAWYERS 2
• LAW 5304 - COMMERCIAL TRANSACTIONS
• LAW 5213 - CONFLICT OF LAWS
• LAW 5299 - CONTEM CHIN LGL INSTN US LAWYR
• LAW 5857 - DIVERSITY COPR GVRNC SEMINAR
• LAW 5252 - INTL & EURPN LABOR MARKTS LAW
• LAW 5469 - FRENCH FOR LAWYERS 1
• LAW 5471 - FRENCH FOR LAWYERS 2
• LAW 5416 - GERMAN FOR LAWYERS
• LAW 5473 - GERMAN FOR LAWYERS 2
• LAW 5986 - INTERNATIONAL ARBITRATION SEM
• LAW 5043 - INTL COMMERCIAL ARBITRATION
• LAW 5275 - INTL & FOREIGN LEGAL RESEARCH
• LAW 5653 - INTERNATIONAL HUMAN RIGHTS
• LAW 5547 - INTL INTELLECTUAL PROPRTY LAW
• LAW 5858 - INTERNATIONAL SALES SEMINAR
• LAW 5841 - INTERNATIONAL TAX
• LAW 5351 - INTRO TO EUROPEAN UNION LAW
• LAW 5365 - INTRO RUSS & UZBEK LEGAL SYS
• LAW 5866 - ISLAMIC LAW & JURISPRDNC SEM
• LAW 5475 - SPANISH FOR LAWYERS 1
• LAW 5476 - SPANISH FOR LAWYERS 2
• LAW 5694 - TRADE MARK LAW
• LAW 5453 - TRANSNATIONAL LITIGATION
• LAW 5253 - TRANAT LITIGATN CRT AROND WRLD

Note
For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.
Law - J.G. Civil Litigation Certificate Program

Are you drawn to the real life drama of the courtroom? Do you have dreams of becoming a trial attorney? If so, then the University of Pittsburgh School of Law (PittLaw) may just be the place for you. Through its unique John P. Gismondi Civil Litigation Certificate Program, PittLaw can provide you with a unique curriculum devoted exclusively to training the trial lawyers of tomorrow.

During the first year of law school, all students take the same courses. Those students who wish to register for the Gismondi program, do so at the beginning of their second year of law school. During their second and third years, all students enrolled in the certificate program will take certain required foundational core courses, a clinic or practicum, as well as a number of specialized classes. The heart of the Gismondi program is a collection of specialized courses taught exclusively by a pre eminent group of practicing trial attorneys whose insight and experience offer an invaluable perspective in the classroom. Together with our core courses, these select courses provide a level and depth of litigation training unlike that available at most any other law school.

In each of these specialized skills courses, class size is kept small so as to enrich the learning experience. Students not only are taught legal rules and principles in a typical lecture format, but more importantly, they are assigned to “role play” in a variety of real world litigation scenarios, each designed to develop specific skills which are essential to successful trial work.

Students complete their training by taking a required litigation skills clinic or practicum selected from this group of options: Civil Practice Clinic (Health Law or Elder Law), Tax Clinic, Immigration Clinic, Environmental Law Clinic, PA Practice Practicum, Lawyering III Clinic, Unemployment Compensation Practicum, Criminal Prosecution Practicum, Veterans Practicum or Family Law Clinic. In all of these clinics, students have the potential of representing real clients in actual court proceedings.

The students in the John P. Gismondi Civil Litigation Certificate Program will complete their law school education having developed a set of skills which better prepares them to do courtroom work than traditional law school graduates, and that advantage, in turn, makes the Gismondi certificate students more attractive to law firms seeking to hire young and enthusiastic litigation associates.

Certificate Requirements

All students must follow the JD degree requirements in order to graduate. To qualify for this certificate, students must complete the Core Courses and Required Specialized Skills Courses listed below. In addition, students must take a litigation skills clinic or practicum, or a combination thereof, approved by the Director of Civil Litigation Program for a minimum of four credits.

Students must participate in the Murray S. Love Trial Moot Court Program during their second or third year or the Interscholastic Mock Trial Team (enroll in the attendant seminar Mock Trial Strategy and Practice).

Students must participate in the Program's Court Observation. Students will spend a day organized by the Academy of Trial Lawyers of Allegheny County observing court proceedings. Students will fulfill this requirement in their third year. Students must sign up with the Program Director in order to participate on one of these dates.

Students are required to complete an Upper Level Writing Requirement of 2 credits. Students may satisfy this requirement by taking any seminar or undertaking an independent study project if the paper they write is on an unresolved litigation related issue and the issue is approved by the Director of the Civil Litigation Certificate Program and the faculty member supervising the seminar or independent study project. The paper must comply also with applicable requirements of the professor and the Student Handbook relating to the Upper Level Writing Requirement.

- LAW 5103 - EVIDENCE
- LAW 5407 - TRIAL ADVOCACY

Or

- LAW 5616 - MOCK TRIAL STRATEGY AND PRA
- LAW 5129 - FEDL COURTS & FEDL LITIGATION

Or

Students must take four of these five courses:

- LAW 5320 - LITIGATION STRATEGY & PLANNING
- LAW 5295 - EXPERT WITNESS
- LAW 5236 - PRE-TRIAL PRA-PLEADINGS DISCV
LAW 5223 - ADVANCED TRIAL EVIDENCE
LAW 5197 - ADVANCED TORTS

Note

For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law - Public Policy Concentration

You can earn the Public Policy Concentration by completing the Policy Track of the Semester in DC Program in the spring semester of your 2L or 3L year.

While law students learn many skills that are useful for policy-related work, they do not typically learn how to apply those skills in a policy context, for example by analyzing a government agency report, mapping the stakeholders on a particular issue, preparing questions for a Senate hearing, writing a short policy brief, or developing an advocacy campaign.

The Semester in DC Program Policy Track is designed to fill this gap by teaching you how to apply your legal advocacy, research, and writing skills in the policy context, so that you can successfully engage in policy-related work after graduation. The Policy Track is offered each spring semester jointly with the Graduate School of Public and International Affairs (GSPIA) at Pitt's Washington Center in downtown Washington, DC.

Highlights of the Semester in DC Program Policy Track include:

- A policy-related externship with a government or nonprofit organization in Washington, DC
- Classes that are focused on learning from policy experts who regularly visit as guest speakers and on attaining pragmatic policy advocacy, analysis, and writing skills
- Joint classes with GSPIA students, so that both policy and law perspectives are represented in each class
- An individual alumni mentor for each student, as well as connections with Law and GSPIA's alumni network of hundreds of attorneys and policy practitioners in the Washington, DC area

Semester in DC Program alumni have gone on to do all kinds of policy work after graduation, including positions:

- With the U.S. Departments of State and Health and Human Services
- With U.S. Senate and House offices
- In healthcare policy for Johnson & Johnson, the Maryland Department of Health, and the Legal Resource Center for Public Health Policy
- In environmental policy for the Sierra Club, the Environmental Investigation Agency, and Voices for Progress
- In child/family policy for the Children's Law Center and First Focus
- In labor policy for the AFL-CIO

Requirements

You can earn the Public Policy Concentration by completing the Policy Track of the Semester in DC Program after taking the required 1L Legislation and Regulation course.

The Public Policy Concentration requires students to earn 15 credits in the policy-related classes listed below. Students will have already completed the 3-credit foundational course in Legislation and Regulation in their 1L year. Students can complete the 12 remaining credits by participating in the Semester in DC Program Policy Track, which offers the listed courses. Only the courses listed below may be used to fulfill the requirements of this concentration; other courses may not be substituted.

Foundational Course
- LAW 5032 - LEGISLATION AND REGULATION

Electives (up to 7 credits)
- LAW 5877 - LAW MAKING SEMINAR
- LAW 5666 - LOBBYING AND ADVOCACY
• LAW 5668 - POLICY COLLOQUIUM
  or
• LAW 5954 - D.C. SEMINAR
(Students may apply 1 credit from the DC Seminar to the Public Policy Concentration if their seminar papers are approved in advance as policy-focused.)

Skills Component (6 credits required)
• LAW 5667 - POLICY EXTERNSHIP *
• LAW 5955 - D.C. EXTERNSHIP *
* must be approved in advance as policy focused.

Note
For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

Law - Tax Law Program

The Area of Concentration in Tax Law is intended to provide students with a solid foundation in tax law that can be used either to enter a career in tax law, as a basis for pursuing further study in tax law, or as an adjunct to a career in another area of law. Tax law is unique in that it intersects with every area of the law—from energy and environmental law to corporate law to health law to personal injury law, just to name a few examples. Knowledge of tax law is thus important whether one wishes to specialize in tax law or whether one wishes to gain a deeper knowledge of tax law to improve skills in another area of law (e.g., in advising corporations, partnerships, and other businesses).

Students may pursue this concentration by taking a foundational course in tax law, six credits of elective courses, and three credits of skills-based courses.

Area of Concentration

All students must follow the JD degree requirements in order to graduate. To qualify for this concentration, the Tax Law Area of Concentration requires a minimum of 13 credits. The requirements for the program are divided into three categories—foundational, elective, and skills. Students must take a foundational course in tax law, 6 credits from among the listed elective courses, and 3 credits from among the listed skills courses.

Foundational Course (Required)
• LAW 5105 - FEDERAL INCOME TAXATION

Elective Courses (6 credits required)
• LAW 5817 - CORPORATE TAXATION
• LAW 5371 - PARTNERSHIP TAXATION
• LAW 5259 - ESTATE AND GIFT TAX
• LAW 5841 - INTERNATIONAL TAX *
• LAW 5325 - FEDERAL TAX PRACTICE & PROCEDURE
• LAW 5355 - NON-PROFIT ORGANIZATIONS
• LAW 5273 - STATE AND LOCAL TAX
• LAW 5511 - TAX LAW & POLICY SEMINAR
• LAW 5931 - PITTSBURGH TAX REVIEW

Skills Component (3 credits required)
• LAW 5425 - LOW-INCOME TAX CLINIC
  Tax Law Moot Court Competition
  LAW 5955 - D.C. EXTERNSHIP
  * may be alternately used as a Skills Component

Note
For detailed term-specific course descriptions, please go to the Schedule of Classes Course Lists on the Law School web site.

School of Law Faculty

Full Time

Jessie Allen, Associate Professor of Law
JSD, Columbia University School of Law
JD, Brooklyn Law School

Kevin D. Ashley, Professor of Law
JD, Harvard Law School

Elena A. Baylis, Associate Professor of Law
JD, Yale Law School

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Ronald A. Brand, Professor of Law
Academic Director, CILE
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JD, Cornell University

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JD, University of Texas
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JD, University of Pittsburgh, 1966

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LLM, University of the Basque Country, Spain
JD, University of Puerto Rico Law School

William C. Price
JD, University of Pittsburgh School of Law, 2003

J. Matthew Pritchard IV
JD, University of Pittsburgh

James A. Prozzi
JD, University of Pittsburgh School of Law, 1977
BA, University of Pittsburgh, 1974

Jeffrey Ramaley
JD, Duquesne University

Robert B. Ramsey, III
JD, St. Louis University, 1984

David J. Rosenberg
JD, University of Pittsburgh School of Law, 1982

Michael Rosenzweig, Esquire
JD, University of Pittsburgh School of Law, 1984
John Samuel Rozel  
MSL, University of Pittsburgh

Stephanie W. Schreiber  
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Robert Schupansky

Stephanie L. Sciullo  
JD, University of Pittsburgh School of Law

Joseph W. Selep  
JD, Ohio Northern University

Matt Shames  
Executive Director of JURIST  
JD, University of Pittsburgh School of Law, 2005

Rachael Shaw

Larry A. Silverman  
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JD, Duquesne University School of Law

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Natalya Stepanova-Sipper  
LLM University of Pittsburgh  
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Edward Van Stevenson  
JD, University of Kentucky

Stephen C. Tanzilli  
JD, University of Pittsburgh School of Law

The Honorable David B. Torrey  
JD, Duquesne University

ChatUn T. Turner  
JD, University of South Carolina, 1999

James S. Urban  
JD, Duquesne University School of Law

Elizabeth Van Nostrand (Bjerke)  
Director, Pittsburgh Summer Institute  
Director, JD/MPH Program, Graduate School of Public Health  
Associate Director for Law and Policy, Center for Public Health Practice  
Assistant Professor, Department of Health Policy and Management  
JD, Tulane University
The Honorable Christine A. Ward
JD, University of Pittsburgh School of Law, 1982

Peter M. Watt-Morse
JD, Northwestern University

Heather Weiner, Esquire
JD, Syracuse University

Patricia H. Wysor
MEd, University of Pittsburgh
MFA, University of Pittsburgh

John A. Zottola
JD, University of Pittsburgh School of Law, 1982

**Affiliated Faculty**

Karen Clay
PhD, Stanford University, 1994

Robert M. Hayden
PhD, State University of New York at Buffalo
JD, State University of New York at Buffalo

Kenneth M. Lehn
Ph.D, Washington University

Jeffrey Shook, Affiliated Assistant Professor of Law
PhD, Social Work, University of Michigan
MSW, University of Michigan
JD, American University
School of Medicine

The mission of the University of Pittsburgh School of Medicine is to improve the health and well-being of individuals and populations through cutting-edge biomedical research, innovative educational programs in medicine and biomedical science, and leadership in academic medicine. We strive to implement this mission with the highest professional and ethical standards, in a culture of diversity and inclusiveness, and in an environment that enables each individual to develop to his or her fullest potential.

School of Medicine Faculty

Scholarly Project

Background

Our mission, first and foremost, is to educate the finest clinicians and investigators. To be successful in either - or, in some cases, both - of these ventures requires nothing less than outstanding creativity and leadership. One needs to be creative as a clinician because, despite all of the advances we have made in medicine, it is still quite often a mystery and diagnoses are not always obvious. One needs to be creative as an investigator because research, by its very nature, involves a quest for that which is hidden and, if discovered, constitutes one more bit of the vast, intricate puzzle we call life.

Implementation

For Pitt medical students since 2004, part of their training is to meet the new curricular requirement of formulating and completing a scholarly project of personal interest to them. The scholarly project was incorporated longitudinally throughout the curriculum as an indispensable component of medical education and has been broadly defined to provide a wide range of opportunities (including laboratory-based or clinical research experiences as well as less traditional choices) to appeal to individual students' interests and aspirations. The intent is to expose students to the mechanics of scientific investigation; teach them how to develop a hypothesis and how to collect, analyze, and interpret data to support it; encourage them to pursue research opportunities; and help them understand the structure of thought underlying the practice of medicine.

Among the program's distinctive elements are thorough preparatory course work designed to foster the skills that students need to conduct scholarly work successfully and an emphasis on developing technology to promote longitudinal reporting, learning, and mentorship. Many students initiate their scholarly project by participating in a summer research program, while others might take a year off to pursue an intensive research program at Pitt or elsewhere. Some students find the experience so rewarding that they consider a career as a physician-scientist. The goal in every case, however, is to enhance their ability to think independently, critically, and creatively and, thereby, become better equipped to practice medicine in the 21st century.

Outcomes

The class of 2008 was the first to complete the scholarly project experience. Students worked with mentors from virtually all medical school departments and an array of institutions across the US. Students chose their mentored research theme from a wide array of possibilities, from outcomes research to evolutionary molecular biology. The endeavors of this first graduating class resulted in 13 fellowships, grants, or other national awards; 20 School of Medicine awards; co-authorship of 42 peer-reviewed papers; and more than 46 national presentations and abstracts.

Students are able to be highly productive on scholarly projects during the four-year medical curriculum. These projects and their outcomes demonstrate the achievability of the scholarly project program goals, including development of in-depth knowledge in a focused area, the ability to synthesize and critically evaluate published work by others, and the generation and completion of new studies that advance the health sciences. The scholarly project represents a novel (and perhaps even prototypical) way to increase the number of medical students who pursue research-based careers or clinical careers grounded in evidence-based medicine. It endows all of our graduates with the confidence needed to be creative and analytical clinicians - and those are the kinds of doctors we want.
Adult Inpatient Medicine

Course Description

This 8-week interdisciplinary clerkship is divided into two blocks of 4 weeks each. During each block the student is assigned to an inpatient rotation at a local hospital. On the first day of each block students participate in case-based workshops led by faculty in Emergency Medicine and Geriatric Medicine. During this inpatient rotation, students are assigned their own patients and apply their clinical skills under resident and faculty supervision. Students learn how to take an accurate and pertinent history, conduct a physical examination, recognize patterns of illness, and acquire approaches to disease management. All students participate in four critical care medicine simulation sessions at the WISER Center, where they have hands-on experience evaluating and treating acute cardiopulmonary conditions.

The objectives of the course are that students should become able to:

1. outline the diagnostic evaluation and initial management of common medical symptoms.
2. demonstrate understanding of the historical features, physical examination findings and underlying pathophysiology of common medical conditions, and particularly of disease processes present in encountered patients.
3. formulate an appropriate differential diagnosis, and create and implement the diagnostic evaluation and therapeutic plan for encountered patients.
4. recognize the need for patient resuscitation and initiate appropriate initial treatment in unstable patients.
5. Clerkship locations include UPMC Montefiore, UPMC Shadyside, UPMC Mercy, and the VA Pittsburgh Healthcare System.

Educational Methods

- Inpatient patient care
- Case-based workshops
- Simulation sessions
- Lectures
- Student teaching attending conferences
- Standardized patient sessions

Evaluation

Each 4-week Clinical Block contributes 40% of the clerkship grade. The Clinical Block grades are from the evaluations of the ward attending (50% of the block grade), the student teaching attending (25% of the block grade), and the resident (25% of the block grade). The final written examination is a National Board of Medical Examiners subject exam that constitutes 20% of the clerkship grade.

Grading: The clerkship is graded Honors, High Satisfactory, Satisfactory, Low Satisfactory, Unsatisfactory.

Faculty Note

Clerkship Director Thomas Painter, MD, is a recipient of the Kenneth E. Schuit Master Educator Award. Clerkship Co-Director Melissa McNeil, MD, is a recipient of the Kenneth E. Schuit Master Educator Award, the Donald S. Fraley Award for Medical Student Mentoring, and multiple Excellence in Education Awards for Small Group Facilitator. Clerkship Co-Director Brian Heist, MD, is a recipient of the Clerkship Preceptor of the Year Award. Clerkship Co-Director Erika Hoffman, MD, is a recipient of the Clerkship Preceptor of the Year Award. Clerkship Co-Director Susan Dunmire, MD, is a recipient of the Provost's Innovation in Education Award; and multiple Clinical Educator of the Year Awards, Clinical Golden Apple Awards. Clerkship Co-Director Adam Yares, MD, is a recipient of the Sheldon Adler Award for Innovation in Medical Education. In addition, Drs. Painter, McNeil, Dunmire, and numerous clerkship faculty are members of the UPSOM Academy of Master Educators.
Neurology

Course Description

The Neurology Clerkship (3 weeks) integrates experience in neurology, neurosurgery, neuropathology, and neuroradiology. Clinical teaching with attendings and residents takes place in inpatient and ambulatory settings.

The objectives of the course are for students to be able to:

1. perform a detailed and focused neurologic history and physical exam.
2. describe the presentations, course, and treatment of common neurologic disorders.
3. understand and use tests to localize and diagnose neurologic diseases.
4. recognize and understand how to manage neurologic emergencies.

Clinical sites include Children's Hospital of Pittsburgh of UPMC, Magee-Womens Hospital of UPMC, UPMC Montefiore, UPMC Presbyterian, UPMC Shadyside, Shadyside Neurology Center, and the VA Pittsburgh Healthcare System.

Clinical experiences are augmented by a focused classroom curriculum that includes lectures, small group discussions, and case presentations. During the formative standardized patient encounters students refine their skills in neurologic assessment and patient management. Students also attend neuropathology workshops, and have the option of attending neurosurgery operating-room sessions.

Educational Methods

- Inpatient patient-care activities
- Ambulatory patient-care activities
- Workshops
- Medical record review
- Structured readings
- Standardized patient encounters
- Lectures
- Diagnostic imaging workshops

Evaluation

The Neurology clerkship grade is based on clerkship-preceptor evaluation (50% of the Neurology final grade), the National Board of Medical Examiners subject exam score (30%), the Neurology Patient Exam (10%), the Medical Record Review (5%), and professionalism (5%).

Grading: The clerkship is graded Honors, High Satisfactory, Satisfactory, Low Satisfactory, Unsatisfactory.

Faculty Note

Clerkship Director Laurie Knepper, MD, is a recipient of the Clerkship preceptor of the Year Award. Clerkship faculty Drs. Paula Clemens, John Doyle, Robert Kaniecki, and Angela Lu are also recipients of the Clerkship Preceptor of the Year Award.

Combined Ambulatory Medicine and Pediatrics

Course Description
This 8-week combined ambulatory course provides students with 4-week experiences in medicine and in pediatrics. During one half-day per week, students participate in a longitudinal curriculum that covers topics common to both disciplines. The clerkship curriculum is presented in an integrated fashion across both disciplines, and incorporates many cross-cutting themes, such as evidence-based medicine, health-care finance, tobacco cessation, women's health, geriatrics, wellness and prevention, and interpersonal communications.

The objectives of the course are that students should become able to:

1. assess the well patient in the ambulatory setting.
2. evaluate common acute clinical problems in the ambulatory setting.
3. participate in the longitudinal care of patients with chronic conditions.
4. incorporate cost-effective, age-specific, preventive strategies into routine care.

Students participate in patient care at offices and clinics throughout the region, including hospital-based sites and a variety of community-based locations, in generalist and/or specialist settings.

Educational Methods

- Ambulatory patient-care activities
- Critically appraised topic assignments
- Standardized patient sessions
- Multimedia modules
- Lectures
- Web-based CLIPP cases
- Structured readings
- Learning logs
- Workshops

Evaluation

Evaluation in this course is based on medicine preceptor evaluations (30%), pediatrics preceptor evaluations (30%), written exam (15%), standardized patient OSCE (15%), and professionalism (10%).

Grading: The Clerkship is graded Honors, High Pass, Pass, Low Pass, or Unsatisfactory.

Faculty Note

Clerkship Co-Director Elmer Holzinger, MD, is a recipient of the Chancellor's Distinguished Teaching Award, the Donald S. Fraley Award for Medical Student Mentoring, and the Clerkship Preceptor of the Year Award. Philip Kaleida, MD, is the recipient of multiple Provost's Innovation in Education Awards. Melissa McNeil, MD, is a recipient of the Kenneth E. Schuit Master Educator Award. Eric J. Anish, MD is the recipient of the Clerkship Preceptor of the Year Award. In addition, Clerkship Director Michael Elnicki, MD, and Drs. Holzinger, Kaleida, McNeil, Anish, and Phrampus are members of the UPSOM Academy of Master Educators.

Family Medicine

Course Description

The Family Medicine Clerkship is a 4-week rotation that encompasses the comprehensive and longitudinal care of patients with a special emphasis on care of individuals in the context of families and communities.
The objectives of the course are for students to:

1. demonstrate knowledge and implementation of comprehensive evidence-based, gender- and age-specific individualized care.
2. outline treatment strategies for the patient as a "whole person," addressing acute and chronic diseases, health promotion and disease prevention in the context of each patient's social, economic, cultural and religious background.
3. recognize the complex interactions among culture, literacy, community, race, age, gender, education, and language on an individual patient's experience with health care.

Students participate in patient care at offices and clinics throughout the region, including hospital-based sites and a variety of community-based locations.

Educational Methods

- Ambulatory and inpatient clinical experiences
- Case-based workshops
- Patient-centered medical home exercises
- Home visit and family and community assessment
- Clinical skills workshops
- Lectures
- Required readings

Evaluation

Evaluation in this course is based on evaluation of clinical performance by preceptors at community-based sites (70%), modified chart simulated recall oral exam (10%), written exam consisting of 50 multiple-choice items (10%), and documentation of family and community assessments (10%).

Grading: The clerkship is graded Honors, High Pass, Pass, Low Pass, Unsatisfactory.

Obstetrics and Gynecology

Course Description

This 4-week clerkship emphasizes health care for women of reproductive and postmenopausal ages. Students will rotate through three clinical segments, including outpatient services (emergency department, outpatient clinics and offices), obstetrics (labor and delivery suite), and gynecology (private service and university service). Daily schedules include teaching rounds, evaluation of outpatients, preparation of patients for surgery and assisting at surgery and deliveries, postoperative and postpartum care.

The objectives of the course are that students:

1. adequately perform a thorough and organized menstrual, obstetric, gynecologic, contraceptive and sexual history.
2. demonstrate competency in the performance of breast and pelvic exams.
3. recognize the presentation and course of common diseases specific to women.
4. demonstrate understanding of the physiologic changes of normal pregnancy.

The clerkship takes place at Magee-Womens Hospital of UPMC.

Educational Methods
Pediatric Inpatient Medicine

Course Description

This 4-week clerkship exposes students to inpatient pediatrics. Students are assigned to one pediatric inpatient team and participate in all aspects of patient care and management, including performing histories and physical examinations; writing progress notes; and communicating with other members of the medical team, attending physicians, referring physicians, consultants, families, and patients.

Students read the current literature and standard pediatric textbooks in order to understand childhood growth and development, and major pediatric disease processes and therapies. In addition, students attend conferences, lectures, and rounds that are held throughout the rotation.

During the inpatient rotation, students work as part of the floor medical team. Each student presents a clinicopathologic conference (CPC).

The objectives of the course are that the student will:

1. increase his/her knowledge base in pediatrics; specifically he/she will become familiar with anticipatory guidance, nutrition and common pediatric health problems.
2. develop an understanding of the growth and development unique to children, with particular attention paid to the attainment of developmental milestones as well as the effect of illness on the child's growth and development.
3. develop an understanding of the importance of psycho-social factors, their influence on a child's growth and development and various somatic complaints.
4. learn how to interview effectively the patients and their families and be able to adapt the interview to the particular age group and developmental level of the patient.
5. be able to obtain and organize a complete and relevant history.
6. develop basic skills in pediatric physical examination and will attain facility with the evaluation of infants, children, and adolescents.
7. enhance his/her problem-solving and critical-thinking skills and be able to develop a reasonable differential diagnosis, an appropriate assessment, and a coherent plan, using evidence whenever possible.
8. develop skills in both oral and written presentations and be able to present information in a succinct, organized manner.
9. develop an understanding of the therapeutic role of the patient-family-physician relationship.
10. explore ethical issues as they relate to the patient-family-physician relationship.
11. understand the roles of the pediatrician caring for hospitalized children.
12. demonstrate professional attitudes and behavior.

The clerkship takes place at Children's Hospital of Pittsburgh of UPMC.
Educational Methods

- Inpatient patient care activities
- CLIPP cases
- Workshops
- Lectures
- Structured readings
- Learning logs
- Conferences

Evaluation

Evaluation of the clerkship is based on preceptor evaluations (65%), participation/presentation at student morning report (10%), completing the required CLIPP cases (10%), and a multiple-choice, written exam (15%).

Grading: The clerkship is graded Honors, High Pass, Pass, Low Pass, Unsatisfactory.

Faculty Note

Clerkship Director Michael J. Decker, MD, is a recipient of multiple Clerkship Preceptor of the Year Awards.

Psychiatry

Course Description

The Psychiatry Clerkship is a five-week experience that mixes inpatient, ambulatory exposure to provide a broad view of behavioral health care. Students attend a neuropathology workshop and an AA/NA meeting. Students have the option of attending neurosurgery operating-room sessions and the psychiatric emergency room overnight. Integrated teaching sessions consist of psychiatry core material as supported by evidence-based medicine, involving topics that highlight clinical conditions common to these areas of medicine. Students also participate in formative standardized patient encounters, to develop higher-level skills in psychiatric assessment and patient management.

The objectives of the course are that students should become able to:

1. describe the presentations, course, and treatment of common neuropsychiatric disorders.
2. improve clinical skills by being observed by a faculty member while performing a history (focused or complete), neurological exam (focused or complete), and a psychiatric assessment (including mental status examination).
3. establish rapport and a therapeutic alliance with patients/families.
4. recommend, implement, and assess the benefits of common/important biopsychosocial treatments for specific disorders.

Educational Methods

- Inpatient patient-care activities
- Ambulatory patient-care activities
- Workshops
- Structured readings
- Standardized patient encounters
Evaluation

The Psychiatry Clerkship grading system is comprised of four components:

- Core Clinical Experience (50% of Final Grade)
- Reflective Statement (10%)
- Performance Based Video Exam (10%)
- National Board of Medical Examiners Exam (30%)

The clerkship is graded Honors, High Satisfactory, Satisfactory, Low Satisfactory, Unsatisfactory.

Faculty Note

Course Director Jason Rosenstock, MD, is a recipient of the Kenneth E. Schuit Master Educator Award, the Sheldon Adler Award for Innovation in Medical Education, and the Excellence in Education Award for Course Director. In addition, Dr. Rosenstock is a member of the UPSOM Academy of Master Educators and is the current chair of the UPSOM Curriculum Committee.

Specialty Care

Course Description

This 4-week clerkship is designed to provide students with the opportunity to see patients in specialty-care settings. Students hone their skills in the performance of focused histories and physical examinations, and participate in the development of a plan for the patients. Students rotate for one week each through the specialties of adult emergency medicine, pediatric emergency medicine, ophthalmology, and otolaryngology. They work closely with residents and faculty, and participate as the first point of contact for many patient encounters. In addition, there are workshops in select areas, including dermatology, detailed examination of the musculoskeletal system, suturing/splinting, and interpretation of electrocardiograms. A longitudinal didactic series focuses on topics in ophthalmology and otolaryngology.

The objectives of the course are that students should become able to:

1. perform an accurate and focused history and physical examination on acute, undifferentiated patients, based on presenting complaint and degree of urgency.
2. develop initial treatment plans for common conditions encountered in the Emergency Department.
3. recognize acutely dangerous health problems and prioritize decisions accordingly.
4. develop proficiency in the comprehensive ophthalmologic examination.
5. recognize common ophthalmologic conditions and describe their treatment.
6. recognize ophthalmologic emergencies.
7. develop proficiency in the comprehensive examination of the head and neck.
8. demonstrate an understanding of the presentation and treatment of common otolaryngologic conditions.

Sites for the clerkship include specialist settings in numerous offices and clinics throughout the region, and emergency departments at UPMC Presbyterian, UPMC Mercy, and Children's Hospital of Pittsburgh of UPMC.

Educational Methods

- Clinical experiences
- Lectures
- Workshops
Evaluation

Evaluation in this course is based on adult emergency medicine preceptor evaluations (15%), ophthalmology preceptor evaluations (15%), otolaryngology preceptor evaluations (15%), pediatric emergency medicine preceptor evaluations (15%), one written exam composed of multiple-choice and short-answer questions (20%), learning logs (10%), and professionalism (10%).

Grading: The clerkship is graded Honors, High Pass, Pass, Low Pass, Unsatisfactory.

Faculty Note

Clerkship Co-Director Stephanie Gonzalez, MD is a recipient of the Donald S. Fraley Award for Medical Student Mentoring. Clerkship Co-Director David Eibling, MD, is a recipient of the Kenneth E. Schuit Master Educator Award and the Clinical Golden Apple Award. Clerkship Co-Director Evan Waxman, MD, PhD, is a recipient of the Kenneth E. Schuit Award and multiple Clerkship Preceptor of the Year Awards. In addition, Drs. Gonzalez, Eibling, and Waxman are members of the UPSOM Academy of Master Educators.

Surgery and Perioperative Care

Course Description

This 6-week clerkship covers the discipline of general surgery. Students are assigned to general surgery service (3 weeks) and a surgical specialty service (3 weeks). Teaching with attending physicians and residents occurs in conferences, on rounds, in the operating room, at the bedside, and in small groups.

The objectives of the clerkship are for students to:

1. explain the etiology, differential diagnosis and management of common diseases requiring surgical care.
2. recognize the need for routine, urgent and emergent surgical referrals.
3. demonstrate proficiency in common bedside procedures, and simple suturing.
4. demonstrate proficiency in the approach to preoperative evaluation of patients for surgery.

Additional goals include developing skills in the management of acute pain and postoperative complications. Overall the course is primarily designed to prepare students to assume the role of a primary care physician and to become familiar with the clinical presentations and management of common surgical problems.

Clinical sites include Children's Hospital of Pittsburgh of UPMC, Magee-Womens Hospital of UPMC, UPMC Montefiore, UPMC Presbyterian, UPMC Shadyside, UPMC Mercy, UPMC Passavant, and the VA Pittsburgh Healthcare System. Every student participates in hands-on simulation sessions at the WISER Center, where they gain experience in airway management and trauma resuscitation. The laparoscopic skills lab provides students with an opportunity to practice laparoscopic techniques on specialized simulators. During the mid-clerkship OSCE, students refine their skills in the evaluation of common surgical conditions.

Educational Methods

- Clinical experiences
- Lectures
- Workshops
- Simulations
• Oral presentations
• Conferences
• Ward rounds
• Standardized patient sessions (OSCE)
• Web-based palliative care modules

Evaluation

The Surgery evaluation is based on feedback from faculty and residents (70%), a National Board subject exam (20%), and two formal surgery case presentations (Walk Rounds and Saturday Case Conference, 10%).

Grading: The clerkship is graded Honors, High Satisfactory, Satisfactory, Low Satisfactory, Unsatisfactory.

Faculty Note

Clerkship Director Gregory A. Watson, MD, is a two-time recipient of the Clerkship Preceptor of the Year Award, and was honored with the 2016 Simmons Mentorship Award in Surgery. The former Clerkship Director Peter F. Ferson, MD, is a recipient of the Kenneth E. Schuit Master Educator Award, the Sheldon Adler Award for Innovation in Medical Education and the Clerkship Preceptor of the Year Award. In addition, Drs. Kevin Garrett, Giselle Hamad, Kenneth Lee, Andrew Peitzman, and Peter Ferson are members of the UPSOM Academy of Master Educators.

Preclerkship Course

Course Description

The overall goal of this course is for students to gain a basic knowledge and understanding of core topics that will prepare them to get the most from the clerkship experience.

Specific objectives include preparing students to:

1. recognize the requirements for successful completion of each clerkship rotation.
2. clearly communicate medical information in spoken and written form, and write progress notes, orders, and prescriptions.
3. learn the requirements for successful use of electronic medical records.
4. use information and educational technology to facilitate patient care.
5. function as an ombudsman for the patient's welfare.
6. initiate prompt treatment for acute medical problems, including performing CPR.
7. comprehend the basic approach to management of medical disasters and pandemics.
8. incorporate the tenets of the Honor Council into their daily behaviors.
9. recognize where to go to get help through the SHARP program.
10. complete N95 respirator testing and understand how to effectively use these protective devices.
11. initiate key actions after a blood or body fluid exposure.
12. follow basic infection control procedures against current pathogenic threats, such as MRSA and C. diff.
13. make appropriate referral to and utilization of the services of other members of the health care team.
14. understand the importance of and have respect for all members of the health care delivery team.
15. recognize the key roles of cooperation, collaboration, communication, and leadership in healthcare endeavors.

The course also includes sessions on various administrative necessities, such as pager use and tuberculosis testing, and gives an overall orientation to the clinical years.

The 34 faculty in this course are drawn from departments throughout the School of Medicine and from other health care disciplines and are assisted by fourth year medical students.
Educational Methods

- Lecture
- Workshops
- Pandemic simulation exercise
- Skills sessions
- Small-group cases
- Pre-class preparation exercises

Evaluation

Evaluation for this course is based on attendance and participation in the course sessions.

Grading: This course is graded Satisfactory / Unsatisfactory.

Faculty Note

Course Director Joe Suyama, MD, is a recipient of the Clerkship Preceptor of the Year Award. Course Director John Mahoney, MD, is a recipient of the Carnegie Science University/Post-Secondary Educator Award. Peter Ferson, MD; Donald Middleton, MD; Thomas Painter, MD; and Jason Rosenstock, MD, are recipients of the Kenneth E. Schuit Master Educator Award. In addition, Drs. Mahoney, Ferson, Middleton, Painter, and Rosenstock; Peter Bolova, MD; and Elmer Holzinger, MD, are members of the UPSOM Academy of Master Educators.

Geriatrics Course

Course Description

The Geriatrics course focuses on an interprofessional team approach to complex issues related to aging, which span the basic sciences, clinical acumen, and profound socioeconomic issues for our society. The course is intended to help medical students, as well as selected nursing and pharmacy students, understand the critical issues of aging, and the importance of team-based health care for geriatric patients in long term care facilities.

This course is placed in the curriculum at the mid-point of the third year, which is a unique teachable moment where students can benefit from focused instruction on key topics which are commonly encountered during the core clerkships.

The Geriatrics course is designed to provide students with the knowledge, skills, and experience to recognize and approach common problems in older adults in inpatient and outpatient settings as well as in the nursing home.

Specific objectives include preparing students to:

1. be aware of the great spectrum of health, functional, and cognitive states among individuals as they age.
2. be able to define the word geriatric syndrome, identify a patient with a geriatric syndrome, and develop a rational approach to the work-up and management.
3. be able to describe changes in pharmacologic parameters that occur with aging, obtain a medication history from a geriatric patient, and recognize common drug-related problems in older patients.
4. be able to discuss an approach to a patient with possible cognitive impairment including clinical exam, lab testing, and imaging.
5. be able to list treatments for dementia and describe their use.
6. be able to list hazards of hospitalization and strategies to minimize their occurrence.
7. be able to explain similarities and differences between assisted living, post-hospital rehabilitation, and a dementia unit, and the patient characteristics associated with each.
8. be able to describe the difficulties encountered during transitions of care.
9. be able to describe elements of a patient discharge plan with a focus on patient safety.
10. be able to conduct a basic functional and cognitive assessment of a patient.

The course faculty members are drawn from the Schools of Medicine, Nursing, and Pharmacy.

Educational Methods

- Lectures
- Clinical site visits
- Patient case sessions
- Team-based assignments
- Workshops
- Small-group cases

Evaluation

Evaluation for this course is based on the course individual and group assignments, the course examination, and attendance and participation in the various course sessions.

Grading: This course is graded Satisfactory / Unsatisfactory.

Faculty Note

Robert Arnold, MD, is a member of the UPSOM Academy of Master Educators.

Assessment Week

Course Description

The overall goal of this course is to have students complete a series of structured assessments and participate in focused review sessions designed to enhance their preparation for the Step 2 Clinical Knowledge and Clinical Skills exams.

Specific objectives include:

1. Reviewing common important dermatological conditions and how to describe skin lesions
2. Reviewing common radiologic findings that every graduating student should know how to identify
3. Interpreting common and life-threatening EKG findings
4. Practicing with Step 2 CK exam questions to better understand content and timing of the exam
5. Practicing common clinical procedures often performed in acting internships
6. Reflect on personal strengths and opportunities for growth, as part of establishing one's own educational agenda for the senior year

Educational Methods

- Practice exams
- Skills sessions
- Small group cases
- Self-assessment sessions
Evaluation

Evaluation for this course is based on attendance and participation in the course sessions.

Grading

This course is graded Complete/Incomplete. Any session that is not attended must be made up before a grade of "Complete" will be registered on the transcript.

Faculty Note

Course Director Reed Van Deusen, MD, is a recipient of the Cohen Award for Excellence in Clinical Skills Instruction. Course Co-Director John Mahoney, MD, is a recipient of the Carnegie Science University/Post-Secondary Educator Award. In addition, Drs. Van Deusen and Mahoney are members of the University of Pittsburgh School of Medicine Academy of Master Educators.

Mini-Electives

Medical student curricula are packed with essential courses and content that all students must master, yet most students find time to pursue areas of personal interest. A goal of the recent curricular revision was to provide increased opportunities for such exploration and growth. We believe, and students confirm, that pursuing studies beyond the required curriculum helps students understand the connection between their basic science coursework and medical practice, and provides exposure to topics and specialties that cannot readily be included in the core curriculum. A mini-elective structure was developed to provide well-structured, rigorous and high quality experiences in areas not typically available to students (especially students in the pre-clinical years).

These courses are offered to any first- or second-year student who is able to commit to attending all course sessions, typically four to eight of them. Most mini-electives are only offered during the Spring Term of each academic year. Updates to the course list as well as date changes typically occur in the late Fall. An email is sent to students in early December announcing registration dates. Please note that the longitudinal mini-electives begin in the fall and registration for those mini-electives are made separately by contacting the course director listed on the course description.

Students who have other assigned academic commitments at the course times must meet those commitments. Therefore, some students may not be able to enroll in some mini-electives.

Course space is limited, based on the maximum number of students designated by the course director.

Students who successfully complete a mini-elective course will receive a certificate of completion. It will not be shown on their official University transcript.

For a complete list of courses, please click here.

Additional questions about mini-elective courses should be directed to Betsy Nero in the Office of Medical Education at 412-648-9829 or betsy@medschool.pitt.edu.

School of Medicine Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
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<td>OB-Gyn &amp; Reproductive Science</td>
<td>Faculty.Professor.Professor</td>
<td>M.D.</td>
<td>Albany Medical College</td>
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School of Nursing

http://www.nursing.pitt.edu/

The School of Nursing was established as an independent school of the University by action of the Board of Trustees in April 1939 and was opened in September of the same year. The University conferred the degree Bachelor of Science in Nursing Education for the first time in August 1939. The University conferred the first Bachelor of Science in Nursing degrees in February 1942.

The first Master's degree was awarded in 1944, and the first Doctor of Philosophy degree in 1957. The first Doctorate of Nursing Practice degree was awarded in 2008.

Mission

The University of Pittsburgh School of Nursing, founded in 1939, is one of the oldest programs in baccalaureate and doctoral education in nursing in the United States. As one of the nation's distinguished schools of nursing, the resources of the School constitute an invaluable asset for the intellectual, scientific, and economic enrichment of health care in Pennsylvania, the nation, and throughout the world.

The School of Nursing's mission is to:

- provide high-quality undergraduate education in nursing;
- maintain and develop superior graduate programs in nursing that respond to the needs of health care in general and nursing in particular within Pennsylvania, the nation, and the world;
- engage in research and other scholarly activities that advance learning through the extension of the frontiers of knowledge in health care;
- cooperate with health care, governmental, and related institutions to transfer knowledge in health sciences and health care;
- offer continuing education programs adapted to the professional upgrading and career advancement interests and needs of nurses in Pennsylvania; and
- make available to local communities and public agencies the expertise of the School of Nursing in ways that are consistent with the primary teaching and research functions and contribute to the intellectual and economic development in health care within the commonwealth, the nation, and the world.

Contact Information

University of Pittsburgh
School of Nursing
Student Affairs & Alumni Relations Office
240 Victoria Building
Pittsburgh, PA 15261
412-624-4586 or 1-888-747-0794
E-mail: sao50@pitt.edu
www.nursing.pitt.edu

Master's Program Admission Process and Admission Criteria

http://www.nursing.pitt.edu/degree-programs/master-science-nursing-msn/msn-applicationadmission

Applications are available online at www.nursing.pitt.edu. Admission criteria are described on the school's Web site (http://www.nursing.pitt.edu/degree-programs/master-science-nursing-msn/msn-applicationadmission). Complete applications will be reviewed and interviews (face to face or by telephone) will be conducted prior to an admission decision. The School offers master's admission to only the Clinical Nurse Leader, Nursing Informatics, Neonatal Nurse Practitioner majors/areas of concentration. The University of Pittsburgh School of Nursing admits a FALL COHORT ONLY to all MSN Program areas of concentration. The application deadlines for all areas are February 15th and May
1st. International students are advised to apply by the February 15th deadline. Complete applications received by February 15th will be reviewed and an admission decision will be made by June 1. Complete application received by the May 1st deadline will be reviewed and admission decisions made by June 30th. Applicants must apply online at https://app.applyyourself.com/?id=up-nurs

Applications to the Master Program in nursing are reviewed by the faculty in the applicant's Major/Area of Concentration. Applicants must meet the criteria listed below. Qualified applicants are considered without regard to race, color, religion, national origin, ancestry, sex, age, marital status, familial status, sexual orientation, disability, or status as a disabled veteran or a veteran of the Vietnam era.

**Applicants must have:**

- A baccalaureate degree in nursing from an ACEN (NLN), ACICS, or CCNE accredited program.
- Current RN license in U.S. state/territory or locale where student will complete clinical requirements.
- A GPA of 3.0 or higher in the undergraduate degree.
- Relevant clinical experience if (specified by the Major/Area of Concentration).
- A pre-admission interview. If the applicant resides at a great distance, a telephone interview may be conducted.
- Official scores on the Graduate Record Examination (GRE). The GRE may be waived if the GPA is 3.5 or higher.
- Pre-requisite statistics course within the last 10 years with a grade of B- or better.
- Three letters of recommendation attesting to the applicant's capacity and potential for master's study from each of the following (these can be uploaded into the online application) (/apply-now): The director or a faculty member from the most recent academic program attended (if applicant has been a nursing student in the last 5 years); a recent employer; and a person who can speak to the applicant's professional work.
- A typed essay (500-word minimum) stating your philosophy of nursing; reasons for wanting to study in a particular area of concentration; what you expect from the master's program; and your future career goals.

**Doctor of Nursing Practice (DNP) Admission Process and Admission Criteria**

http://www.nursing.pitt.edu/degree-programs/doctor-nursing-practice-dnp

The Doctor of Nursing Practice (DNP) program prepares nurses within a clinical focus (nurse practitioner, clinical nurse specialist, nurse-midwife or nurse anesthesia) or a systems focus (Health Systems Executive Leadership). Graduates are prepared for advanced practice at a new level of state-of-the-art science expertise with grounding in evidence based practice.

This practice-focused doctoral program will prepare nursing leaders for the highest level of clinical nursing practice. Throughout the program students will develop the clinical, organizational, economic, and leadership skills to design and implement programs of care delivery which significantly impact health care outcomes and have the potential to transform health care delivery. Graduates with this terminal clinical degree will be prepared for roles in direct care or indirect, systems-focused care.

In today's health care environment advanced practice nurses require complex clinical skills and sophisticated knowledge of the evidence-base for practice. Graduates of the DNP will be able to affect the health care delivery system by being superb clinicians, by evaluating the evidence base for nursing practice, by becoming leaders in the clinical arenas, by establishing standards and policies, and by meeting the needs of today's diverse health care systems.

The DNP Program has multiple points of entry and allows for three types of prospective students: post-baccalaureate RNs, including: current master's degree nursing students; RN Options students; and advanced practice nurses and nursing administrators who have completed a master's degree from an CCNE, ACICS or ACEN [NLN] accredited program of nursing. Nurses with a PhD can also seek a DNP.

The University of Pittsburgh School of Nursing admits a FALL COHORT ONLY to all DNP Program areas of concentration except the Nurse Anesthesia BSN to DNP major which admits a SPRING TERM COHORT only. The application deadlines for all areas are February 15th and May 1st. International students are advised to apply by the February 15th deadline. Complete applications received by February 15th will be reviewed and an admission decision will be made by June 1. Complete application received by the May 1st deadline will be reviewed and admission decisions made by June 30th.
Applicants must apply online at https://app.applyyourself.com/?id=up-nurs.

Admission to the DNP Program

The DNP Program admits BSN graduates and, advanced practice nurses and nursing administrators who have completed a graduate degree in nursing from a CCNE, ACICS, or ACEN [NLN] accredited program in nursing.*

* BSN graduates with a master's in other areas may be considered for admission.

BSN to DNP

- Current RN license in U.S. state/territory or locale where student will complete clinical requirements
- ≥ 3.0 GPA in BSN (from ACEN [NLN], ACICS, or CCNE accredited program)
- GRE: Verbal & Quantitative sections (competitive scores), Analytical Writing (≥ 3)
- Pre-requisite statistics course within the last 10 years with a grade of B- or better.
- Clinical experience for select focus areas** required or preferred for selected majors and concentrations

MSN to DNP

- Current RN license in U.S. state/territory or locale where student will complete clinical requirements
- ≥ 3.0 GPA in MSN from an accredited program or master's in related field (must have BSN from an accredited program)
- GRE: Verbal & Quantitative sections (competitive score), Analytical Writing (≥ 3)
  (may be waived if MSN or master's in related field with GPA ≥ 3.5)
- Pre-requisite statistics course within the last 10 years with a grade of B- or better.
- Clinical experience for select focus areas**
- Nurse Anesthesia MSN to DNP (additional requirements)
  1) current Nurse Anesthetist certification in US state/territory or locale where student will complete the DNP Scholarly Project
  2) Minimum of 3.0 GPA in MSN or MS in Nurse Anesthesia from an accredited program

RN-DNP

Applicants to the RN-DNP program must graduate from a CCNE, ACICS or ACEN [NLN] accredited associate degree program or diploma school of nursing. A student may be admitted to the DNP program pending satisfactory completion of the 24 graduate bridge credits and completion of the BSN.

**Clinical Experience for Select Focus Areas

- Neonatal NP: Equivalent of 2 years full time (within last 5 years) nursing experience in the care of critically ill newborns, infants, and children in critical care inpatient settings (preferably Level III NICU) Students may enroll in pre-clinical courses while obtaining practice experience
- Health Systems Executive Leadership: 2 years of management experience
- Nurse Anesthesia BSN to DNP:
  Minimum of 1 year full-time ICU/critical care nursing experience (within last 5 years) by start of program (may apply if employed in ICU/critical care and will have required experience before admission term)
- Nurse-Midwife: One year of nursing experience in a Labor and Delivery unit preferred, but will consider applicants demonstrating other interest/experience in women's health.

Doctor of Philosophy (PhD) Admission Process and Admission Criteria

http://www.nursing.pitt.edu/degree-programs/doctor-philosophy-phd

The PhD program follows a FALL TERM ONLY COHORT ADMISSIONS process. Applicants to the PhD program must submit their completed applications by February 1. Complete applications received by February 1 will be reviewed and admission decisions made prior to June 1. Application decisions (except for international applicants) will be communicated electronically (by e-mail). Applicants must apply online at https://app.applyyourself.com/?id=up-nurs. The School offers BSN-PhD and MSN-PhD options. Applicants are expected to be RN's. The School
of Nursing also offers a currently matriculating BSN to PhD option, in which a student who has not yet completed the BSN can be admitted conditionally into the PhD program pending successful completion of their BSN. Interested applicants should contact the Student Affairs & Alumni Relations Office at 412-624-4586 for further information.

**Admission to the PhD Program**

Admission to the PhD program is assessed through interviews, references, standardized testing, a written statement of goals, and a second writing sample. Documentation of academic success and achievement of competitive scores on the Graduate Record Examination (GRE) taken within the last five years are required.

The doctoral faculty strongly recommends that students develop knowledge of and experience with word processing, database management, and computerized literature searches prior to applying to the PhD program.

**Length of Program**

The post-master's full-time student (MSN to PhD) is comprised of 48 credits minimum, and students may complete the program in approximately two and a half years depending on the nature and complexity of research for the dissertation. Twenty-four credits are granted from the prior master's program. For courses taken prior, an evaluation of the content of a course taken elsewhere must be approved by the Director of the PhD Program to determine its comparability with the coursework at the University of Pittsburgh. Students entering the MSN to PhD program will work with their academic advisor to conduct a gap analysis to review prior research-related coursework to determine if additional research core coursework is needed beyond that specified in the MSN to PhD curriculum plan. The part-time student may complete the program in three to four years. The statute of limitations for completion of the MSN to PhD track is eight consecutive calendar years from the first term of registration for credits that are in the required curriculum plan for the doctoral degree. (MSN to PhD track)

The BSN to PhD program requires 72 credits minimum. Students admitted to the BSN to PhD track are expected to enroll full-time, and the program can be completed in three years, depending on the complexity of research for dissertation. Students are also encouraged to consider obtaining a simultaneous master's degree such as the Clinical Nurse Leader. The statute of limitations for completion of the BSN to PhD track is 10 consecutive calendar years from the first term of registration for credits that are in the required curriculum plan for the doctoral degree.

For more information, see Policy 208.

**Doctor of Philosophy (PhD)**

Doctor of Philosophy

The Doctor of Philosophy (PhD) program prepares nurse scholars who will discover and extend scientific knowledge that advances the science and practice of nursing and contributes to other disciplines. Graduates can assume leadership roles within research teams, health care systems, and schools of nursing in academic institutions.

The PhD program of study provides a coherent series of courses, seminars, and discussions designed to develop in the student a mature understanding of content, methods, and values of the discipline of nursing and its relation to other fields. The curriculum includes courses in the philosophical underpinnings and theoretical foundations for research, and research design, measurement and intervention development. Courses also include advanced statistics, advanced quantitative and qualitative methods, the responsibilities and activities of scientists, and the art and science of teaching and learning. Students work closely with research faculty members from nursing and other disciplines. Each student also participates in two mentored research experiences. The first is the Apprenticeship Practica, wherein students affiliate with a mentor's established research team over time to explore the scientific literature, develop, plan, and implement an apprenticeship research project, and disseminate findings. This experience allows for the opportunity to acquire individualized and tangible research skills within a mentored application environment which is additive to and precedes the dissertation experience. The second mentored research experience is the students development and implementation of their independent dissertation project, culminating in dissertation defense. Students prepare and submit applications for competitive research funding.

**Admission of Students from Other Countries (MSN, DNP, and PhD)**

912
Students from other countries applying to the School of Nursing should apply using the same admissions process and admissions criteria described above. The application should be completed in English and be accompanied by official academic credentials with notarized English translations. Applicants must successfully complete the TOEFL or IELTS if English is a second language. Applicants must also have a professional nursing license. The following links specify the licensure requirement for the MSN, DNP, and PhD programs. Applicants who need to apply for a professional nursing license are encouraged to visit the Pennsylvania State Board website which contains information for internationally educated nurses applying to take the NCLEX-RN examination.

Insurance and Health Care Requirements

All students admitted with full or provisional status are required to participate in a University liability insurance policy annually and to have a physical examination upon admission. All admitted students are required to submit Act 33, 34 and 73 clearances completed within 3 months of admission. Individual students must meet additional health requirements of clinical agencies such as drug testing. Students must submit a completed School of Nursing's Annual Health Form each year. Current CPR certification is required prior to enrollment in all clinical courses. Students are required to carry health insurance for the duration of their study, which will cover payment for treatment and follow-up procedures related to injury or medical problems incurred during graduate study. The University of Pittsburgh makes insurance programs available to graduate students (see: http://www.hr.pitt.edu/benefits/student-in).

Financial Assistance

http://www.nursing.pitt.edu/scholarship-opportunities

The sources of awards and aid may include: professional nurse traineeships, graduate student assistant positions, graduate student researcher positions, teaching assistant positions, teaching fellow positions, school scholarships, pre- and postdoctoral training grant fellowships, federal Stafford Loans, private loans, and emergency aid.

Academic Policies

http://www.nursing.pitt.edu/resources-students/policies

All students in the School of Nursing are governed by School of Nursing and University policies. Therefore, it is essential that students regularly review and familiarize themselves with those policies, both general and graduate. Question about policies should be directed to the academic advisor or to their respective program, major or area of concentration director/coordinator. Policies of particular importance deal with admission criteria, registration processes, transfer of credits, acceptable academic status, warning and probation, readmission, requirements for degree completion, academic integrity, unsafe clinical performance, and impaired clinical performance.

Advising

Each new student who is admitted to the graduate program is assigned a faculty advisor from the specific major or area of concentration to which the student is admitted. The faculty advisor provides some initial orientation to the school, the University, and the program requirements. Each student meets at least once a term with the advisor for course selection and other academic advising, although students and advisors can meet additionally as needed. The advisor is actively involved if there are academic concerns.

Each student also can use the staff in the Student Affairs & Alumni Relations Office in the School of Nursing to obtain information about sources of financial aid, scholarships, school policies, registration, course availability, University resources, and community resources for help with personal problems. An online general orientation program is mandatory for all new students.

General Degree Requirements
To earn the Master of Science in Nursing (MSN), the Doctor of Nursing Practice (DNP) and Doctor of Philosophy (PhD) the student must demonstrate satisfactory academic achievement in required coursework prescribed by the curriculum with an overall academic achievement of a minimum Grade Point Average (GPA) of 3.00. Successful completion of a comprehensive examination is also required for the MSN, BSN to DNP and PhD in nursing. The DNP requires a DNP project and the PhD requires successful defense of an original dissertation.

Application for Graduation

Each candidate for graduation must file an official Application for Graduation in the Nursing Student Affairs & Alumni Relations Office at least three months before the degree is to be completed, otherwise there is a fee assessment after the deadline. Students are required to be register for at least 1 credit at the University during the term in which they are graduating.

Major and Degree Options

The School of Nursing offers the following graduate degrees:

- The Master of Science in Nursing with majors and areas of concentration in the following areas:
  - Nurse Anesthesia* (last class graduates December 2018)
  - Nurse Practitioner
    - Neonatal Nurse Practitioner
  - Nurse Specialty Role
    - Clinical Nurse Leader
    - Nursing Administration*
    - Nursing Informatics
  *not currently accepting applications

- The Doctor of Nursing Practice (DNP)
  - MSN to DNP Options
    - Nurse Practitioner
      - Adult-Gerontology Acute Care Nurse Practitioner
      - Adult-Gerontology Primary Care Nurse Practitioner
      - Family (Individual Across the Lifespan) Nurse Practitioner
      - Pediatric Primary Care Nurse Practitioner
      - Neonatal Nurse Practitioner
      - Psychiatric Mental Health Nurse Practitioner
    - Clinical Nurse Specialist
      - Adult-Gerontology (CNS)
    - Nurse Specialty Role
      - Health Systems Executive Leadership
    - Nurse Anesthesia
  - BSN to DNP Options
    - Nurse Practitioner
      - Adult-Gerontology Acute Care Nurse Practitioner
      - Adult Gerontology Primary Care Nurse Practitioner
      - Family (Individual Across the Lifespan) Nurse Practitioner
      - Pediatric Primary Care Nurse Practitioner
      - Neonatal Nurse Practitioner
      - Psychiatric Mental Health Nurse Practitioner
    - Clinical Nurse Specialist
      - Adult-Gerontology (CNS)
    - Nurse Anesthesia
    - Nurse-Midwife

The Doctor of Philosophy (PhD) in Nursing (including the BSN to PhD and MSN to PhD options.)
**Special Academic Opportunities/Programs**

The School of Nursing offers a variety of special programs within its master's and doctoral programs:

**Minors**

Students in the Master's program, the DNP program and the PhD program have the option of completing a minor in nursing education, nursing informatics, nursing research, nursing administration, and gerontology for nurse practitioners, or health care genetics. The minimum credits required to obtain a minor is 9-12 credits.

**Post-Professional Certificates**

Post-Professional certificates are available in nursing education, health care genetics, nursing informatics, nursing research, gerontology for nurse practitioners, adult-gerontology acute care nurse practitioner, neonatal nurse practitioner, and psychiatric mental health nurse practitioner. The certificate options require a minimum of 15 credits; additional credits may be required depending on the certificate program and previous graduate course work. All students admitted to a nurse practitioner certificate programs must meet all curriculum requirements of the full graduate degree program, either through previous course work or credits earned during the certificate program. Individual review of transcripts will determine the exact number of credits needed to meet curriculum requirements.

Admission criteria for master's level certificate programs include:

- Evidence of successful completion of MSN, DNP or other relevant first professional degree
- Relevant work experience
- Three letters of recommendation
- Satisfactory interview with program faculty
- Current RN license if the certificate program includes clinical experiences.

**School of Nursing Faculty**

**Program and Course Offerings**

**DNP**

- Clinical Nurse Specialist
- Nurse Practitioner
- Nurse Specialty Role
- Nurse-Midwife, BSN to DNP
- Nursing Anesthesia

**PhD**

- Nursing - BSN to PhD Track
Public Policy and Management/Doctor of Nursing Practice, MPPM/DNP

MASTERS OF PUBLIC POLICY AND MANAGEMENT IN THE GRADUATE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS (GPSIA) AND THE DOCTOR OF NURSING PRACTICE HEALTH SYSTEMS EXECUTIVE LEADERSHIP (HSEL) IN THE GRADUATE SCHOOL OF NURSING

There is a real and increasingly urgent need for nursing professionals to have a strong understanding of nonprofit management techniques and international development strategies, particularly if they seek employment in not-for-profit hospital systems or charitable organizations that provide health care services to underdeveloped communities at home or abroad.

The University of Pittsburgh is uniquely positioned to train leaders for such positions. GSPIA is nationally renowned as a center for the study of international development, human rights, poverty, and the administration of nonprofit organizations. The School of Nursing is consistently ranked as one of the leading schools of its type in the world, and nurses seek out its graduate programs as a credential of choice to advance their careers.

The intention of this joint degree program is to enable students who are in the process of acquiring professional training as health care executive leaders to obtain simultaneously a substantial knowledge of public and nonprofit management tools and techniques that will be useful to them in their careers leading healthcare organizations.

Students will be informed of the joint degree option upon interview, and they will be able to enter the joint program at any time during their course of study. Students in the DNP program move between full- and part-time enrollment depending on concurrent employment demands, this will continue to be facilitated in the School of Nursing. The joint program between the MPPM program in GSPIA and the HSEL DNP program in the School of Nursing is offered both on-campus and as a distance learning option.

Applicants will apply separately to both schools, and they must meet all of the usual admissions requirements for both. The schools will make their admissions decisions independently. Any applicant accepted to both schools will have the option of pursuing the joint degree. Applicants may apply to both schools at the same time. Students enrolled in the MPPM program may apply to the DNP before completing their first 24 credits at GSPIA. Students enrolled in the DNP may apply to GSPIA before completing their first 24 credits at the School of Nursing.

Students may apply to GSPIA at www.gspia.pitt.edu. A complete application to the MPPM program at GSPIA consists of a personal statement, resume, two letters of recommendation, and transcripts showing prior undergraduate and graduate-level work. Successful MPPM candidates must have at least five years of full-time work experience in positions with some management or budgetary responsibility.

Students may apply to SON DNP HSEL at www.nursing.pitt.edu/degree-programs/doctor-nursing-practice-dnp/dnp-admission. A complete application to the DNP HSEL program at the SON consists of a personal essay stating one's philosophy of nursing, reasons for wanting to study in a particular major or concentration, expectation of the DNP program, and future career goals. This should include a proposed area of interest for the DNP project, current CV or resume, three letters of professional recommendation indicating the reviewer's support of the student's ability to successfully complete a demanding graduate level academic and clinical program, official transcripts showing prior undergraduate and graduate-level work, and official GRE Scores (per Admission Criteria).

Candidates for the joint degree program must have at least five years of full-time work experience in positions with supervisory or budgetary responsibility as defined in the GSPIA MPPM admission requirements.

Sample Curriculum Plan

A sample curriculum plan of the joint program is outlined below.

NOTE: Actual courses and sequencing may vary.

Year 1: Fall Term

- NUR 3099 - THE SCIENCE OF HEALTH CARE DELIVERY
- NUR 2011 - APPLIED STATISTICS FOR EVIDENCE-BASED PRACTICE
• NUR 3012 - PUBLIC POLICY IN HEALTH CARE

Year 1: Spring Term

• NUR 2000 - RESEARCH FOR EVIDENCE-BASED PRACTICE 1
• NUR 3013 - ETHICS IN HEALTHCARE

Year 1: Summer Term

• NUR 3031 - METHODOLOGIES FOR DNP PROJECTS
• NUR 2010 - HEALTH PROMOTION AND DISEASE PREVENTION IN CULTURALLY DIVERSE POPULATIONS

Year 2: Fall Term

• PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
• GSPIA Elective

Year 2: Spring Term

• PIA 2104 - FINANCIAL MANAGEMENT
• PIA 2117 - PROGRAM EVALUATION

Year 2: Summer Term

• PIA 2024 - ECONOMICS FOR PUBLIC AFFAIRS
• GSPIA Elective

Year 3: Fall Term

• PIA 2896 - MPPM POLICY SEMINAR
• GSPIA Elective

Year 3: Spring Term

• NURSP 2388 - DATABASE MANAGEMENT
• NUR 3032 - DATA ANALYSIS FOR DNP PROJECTS

Year 3: Summer Term

• Introduction to Informatics
• DNP Residency
• NURSP 2075 - INTRODUCTION TO HEALTH INFORMATICS
• NURSP 3097 - DNP RESIDENCY: ADMINISTRATION

Year 4: Fall Term
NURSP 3096 - DATA ANALYTICS AND CLINICAL SYSTEMS DESIGN
NURSP 3094 - EVIDENCE-BASED MANAGEMENT AND QUALITY IMPROVEMENT

Year 4: Spring Term

- NUR 3052 - MANUSCRIPT DEVELOPMENT
- NURSP 3092 - LEADERSHIP IN COMPLEX SYSTEMS

Year 4: Summer Term

- NURSP 3097 - DNP RESIDENCY: ADMINISTRATION
- NUR 3037 - DNP PROJECT CLINICAL

37 Credits SON; 24 Credits GSPIA = Total 61 credits for Joint Degree

**NOTE:** PIA 2020 meet the School of Nursing requirements for NURSP 2061.

PIA 2024 meets the School of Nursing requirements for NURSP 2091.

### Neonatal Nurse Practitioner

Nurse Practitioner Major

http://nursing.pitt.edu/degree-programs/master-science-nursing-msn/msn-program-majors/neonatal-nurse-practitioner-nnp

The Neonatal Nurse Practitioner (NNP) is prepared to manage the health care of high-risk infants within families and children up to 2 years of age. This expanded clinician role is performed in collaboration with neonatologists and other pediatric clinicians. Graduates assume leadership roles in a variety of clinical settings including intensive care nurseries of various levels, newborn nurseries and high-risk follow-up clinics. Course work and clinical experiences focus on the care and management of critically ill and convalescent premature and full-term infants. Graduates select and perform diagnostic and therapeutic invasive procedures on newborns in the intensive care setting. Students are also prepared to participate in research.

The NNP area of concentration offers both full and part time study on the main campus in Pittsburgh. A post master's option is also available. Selected core courses may be transmitted to distance students (additional fees apply). Graduates are eligible to take the NNP certification examination offered by the National Certification Corporation (NCC) and for legal certification as a CRNP and prescriptive privileges through the State Board of Nursing of the Commonwealth of PA.

### Applicant Requirements

A baccalaureate degree in nursing from a CCNE, ACICS or ACEN [NLN] accredited program in nursing An RN-Option, Early Admission to MSN/DNP is available for this Area of Concentration. Other requirements for admission include an application, transcripts, professional references, an essay, a resume/CV, a prerequisite statistics course within the last 10 years with a grade of B- or better, and a copy of a current license to practice nursing in a state or territory of the United States. All students must obtain a Pennsylvania license prior to beginning clinical courses. Official scores on the Graduate Record Examination (GRE). The GRE may be waived if the BSN GPA IS 3.5 or higher.

Relevant clinical experience: Equivalent of 2 year full time recent (within past 5 years) practice experience as a registered nurse in the care of critically ill newborns, infants, or children in critical care inpatient settings, primarily Level III or IV NICU is required before a student begins the clinical courses

### NNP Full-Time Sample Curriculum Plan:
Fall Term (YR 1)

- NUR 2044 - NURSING GRADUATE ORIENTATION MODULE
- NUR 2004 - PATHOPHYSIOLOGY ACROSS THE LIFE SPAN
  or
- NUR 2004D - PATHOPHYSIOLOGY ACROSS THE LIFE SPAN
- NUR 2010 - HEALTH PROMOTION AND DISEASE PREVENTION IN CULTURALLY DIVERSE POPULATIONS
  or
- NUR 2010D - HEALTH PROMOTION AND DISEASE PREVENTION IN CULTURALLY DIVERSE POPULATIONS
- NUR 2011 - APPLIED STATISTICS FOR EVIDENCE-BASED PRACTICE
  or
- NUR 2011D - APPLIED STATISTICS FOR EVIDENCE-BASED PRACTICE
- NURNP 2026 - ROLE SEMINAR 1
  or
- NURNP 2026D - ROLE SEMINAR 1

Spring Term (YR 1)

- NUR 2000 - RESEARCH FOR EVIDENCE-BASED PRACTICE 1
  or
- NUR 2000D - RESEARCH FOR EVIDENCE-BASED PRACTICE 1
- NUR 2034 - ADVANCED PHARMACOLOGY
  or
- NUR 2034D - ADVANCED PHARMACOLOGY
- NURNP 2540 - PEDIATRIC WELL CHILD CARE THEORY
  or
- NURNP 2540D - PEDIATRIC WELL CHILD CARE THEORY
- NURNP 2570 - COMPREHENSIVE NEONATAL ASSESSMENT THEORY

Summer Term (YR 1)

- NUR 2031 - THE DIAGNOSTIC PHYSICAL EXAM ACROSS THE LIFE SPAN
- NURSP 2075 - INTRODUCTION TO HEALTH INFORMATICS
  or
- NURSP 2075D - INTRODUCTION TO HEALTH INFORMATICS

Fall Term (YR 2)

- NUR 2032 - DIFFERENTIAL DIAGNOSIS CLINICAL
  or
- NUR 2032D - DIFFERENTIAL DIAGNOSIS CLINICAL
NUR 2033 - DIFFERENTIAL DIAGNOSIS THEORY ACROSS THE LIFE SPAN
or
NUR 2033D - DIFFERENTIAL DIAGNOSIS THEORY ACROSS THE LIFE SPAN
NURNP 2571 - GENERAL MANAGEMENT OF THE SICK NEONATE - THEORY
NURNP 2572 - GENERAL ASSESSMENT AND MANAGEMENT OF THE SICK NEONATE - CLINICAL

Spring Term (YR 2)

NURNP 2573 - NEONATAL DISEASE PROCESS 1 - THEORY
NURNP 2028 - ROLE PRACTICUM
NURSP 2098 - HEALTHCARE QUALITY

Summer Term (YR 2)

NUR 2008 - ETHICS FOR ADVANCED PRACTICE NURSING
NUR 2009 - LEADERSHIP AND HEALTHCARE SYSTEMS: POLICY, ORGANIZATION, AND FINANCING OF HEALTH CARE
NURNP 2574 - NEONATAL DISEASE PROCESS 2 - THEORY
NURNP 2028 - ROLE PRACTICUM
NURNP 2029 - ROLE SEMINAR 2
or
NURNP 2029D - ROLE SEMINAR 2
Comprehensive Exam

Total Credits: 58

* Courses with a "D" are delivered synchronously via distance education for qualified students per Policy 438

Nurse Anesthesia Major (Last cohort will graduate in December 2018)

http://www.nursing.pitt.edu/degree-programs/master-science-nursing-msn/msn-program-majors/nurse-anesthesia-msn

(Last cohort was admitted in September 2016. Those interested in future terms should visit our DNP-Nurse Anesthesia page.)

The Nurse Anesthesia MSN Degree Program prepares registered nurses for entry into anesthesia practice. Through an integrated program of classroom and clinical instruction, students develop the didactic knowledge base and clinical skills necessary for safe and effective practice. Graduates are prepared to administer a full range of anesthetics to a wide variety of patients across the life span.

Students rotate through numerous clinical sites in Pittsburgh, the surrounding region and now more distant sites to enhance clinical experiences. Specialty rotations in cardiothoracic, neurosurgical, dental, organ transplantation, pediatrics, obstetrics, and electroconvulsive therapy enrich the program. The clinical program also incorporates rotations to community hospitals to more broadly prepare the graduate for practice in diverse settings. This is a time-intensive course of study and prospective students should consult the department for further details.

Nurse Specialty Role

- Clinical Nurse Leader Concentration
- Nursing Administration Concentration
- Nursing Informatics Concentration
Gerontology Minor for Nurse Practitioners

A 9-credit Gerontology Minor for Nurse Practitioners (NP) can be obtained by DNP students who are enrolled in the Family (Individual Across the Lifespan) Nurse Practitioner (FNP) DNP or the Psychiatric Mental Health Nurse Practitioner (PMHNP) DNP area of concentration.

The Nurse Practitioner functions in an expanded role that includes the diagnoses and management of health care needs of a specific population and this curriculum will prepare the Nurse Practitioner to develop expertise in the care of older adults. The gerontology courses are specifically designed to address the needs of the older adult in regard to the common geriatric syndromes, geriatric economic and social issues and the unique presentation of disease.

The diagnosis and management of these conditions will be emphasized in keeping with the role of the Nurse Practitioner. The courses were designed using national standards for nurse practitioner education through a combination of didactic and clinical learning experiences.

The Gerontology Minor is a 9 credit curriculum available to DNP students currently enrolled in the Family (Individual Across the Lifespan) Nurse Practitioner (FNP) DNP or Psychiatric Mental Health Nurse Practitioner (PMHNP) DNP programs who want to increase their knowledge and expertise related to the diagnosis and management of health care needs in the care of older adults.

Curriculum Format

- ~ 3 Terms
- Onsite
- 180 Practicum Hours

Program Outcomes

Graduates of the Gerontology Minor are prepared to accomplish the following:

- Provide comprehensive, evidence-based geriatric focused care for elderly patients and their caregivers based on physical, mental, emotional and functional changes
- Practice culturally sensitive care in regard to ethnicity, religion, gender and socio-economic status
- Identify available community resources to promote health, safety, function and independence
- Provide leadership to other members of the interdisciplinary team that is focused on the needs and wishes of the patient
- Assume the role of advocate for patients and caregivers in regard to access and transitions within the health care system

Curriculum: Gerontology Minor (subject to change)

- NURNP 2526 - MANAGEMENT: GERIATRIC HEALTH THEORY
  or
- NURNP 2526D - MANAGEMENT: GERIATRIC HEALTH

- NURNP 2527 - ADVANCED MANAGEMENT: COMPLEX GERIATRIC HEALTH ISSUES
  or
- NURNP 2527D - ADVANCED MANAGEMENT: COMPLEX GERIATRIC HEALTH ISSUES
Health Care Genetics

Genetic based medicine is routinely becoming a part of daily health care, having major impacts on patient diagnosis, prognosis and treatment. The curriculum is designed for health care workers who are seeking focused, graduate-level education in the specialty of genetics. Knowledge gained through coursework will enable healthcare workers to better care for and educate their patients.

The Minor in Health Care Genetics is available to enrolled University of Pittsburgh graduate students. Students should consult with their academic advisor. The Minor includes courses in genetics (taught through the School of Nursing) and choice of 2 courses related to the student's career goals or interests (taught through other departments in the Schools of the Health Sciences). Learning experiences may be enriched through Clinical Genetics Case Conferences, Human Genetics Research Seminar, Human Genetics Journal Club, Genetics Grand Rounds, and a Research Practicum in a molecular genetics laboratory.

Curriculum Format

- Full-time or Part-time (~ 3 terms)

Program Outcomes

Graduates of the Minor in Health Care Genetics are prepared to accomplish the following:

- Guide patients in their understanding of the genetic basis of disease as well as providing patient education and guidance in the areas of available genetic testing, interpretation of testing, recurrence risks, and genetic based therapies
- Provide advocacy for patients and families with genetic conditions
- Utilize family histories to determine disorders for which the patient is at risk
- Utilize a variety of resources to stay up to date with advances in genetic based medicine
- Determine when patient referral to a genetic professional is required
- Utilize a variety of resources to provide patients and their families with support mechanisms
- Interpret genetic research findings

Admission Criteria

- GPA ≥ 3.0 in current graduate program

Curriculum

- Electives (per approval of Coordinator) 6 cr.
- NUR 2680 - INTRODUCTION TO GENETICS AND MOLECULAR THERAPEUTICS
- NUR 2681 - ADV TOPICS IN HUMAN GENETICS
Total Credits: 12

Nursing Administration

The Minor in Nursing Administration is available to enrolled University of Pittsburgh School of Nursing graduate students pursuing education in advanced clinical specialty roles who want the opportunity to also obtain knowledge and experience pertinent in management and leadership. Students should consult with their academic advisor. The minor will prepare nurses to assume positions as advanced practice nurses with some management and/or leadership responsibility.

The curriculum focuses on management in complex social and operational systems for healthcare delivery. Attention is given to applying role-related knowledge and skills in diverse settings and populations, including acute care, long term care, psychiatric, and community settings. The culminating practicum is a uniquely designed mentored clinical experience that provides students with an opportunity to experience a leadership role.

Curriculum Format

- Part-time (~ 2 terms)
- 180 Clinical hours

Program Outcomes

Graduates of the Minor in Nursing Administration are prepared to accomplish the following:

- Assume leadership for clinical initiatives and outcomes within their area of clinical focus
- Develop a business case for change within their area of clinical focus

Curriculum

* These courses are available via distance education for qualified students per Policy 438

- NURSP 2061 / NURSP 2061D - ORGANIZATION & MANAGEMENT THEORY*
- NURSP 2091 / NURSP 2091D - FINANCE AND ECONOMICS FOR HEALTH CARE LEADERS*
- NURSP 2092 / NURSP 2092D - LEADERSHIP DEVELOPMENT*
- NURSP 2064 - NURSING ADMINISTRATION SEMINAR AND PRACTICUM

Nursing Education

The Minor in Nursing Education combines didactic courses and two field-based preceptorships in settings and roles of the student's interest. The curriculum prepares students to apply instructional theory and research in the following types of educational settings and roles: schools of nursing, health care agency staff development, continuing education departments, advanced practice nursing, and patient and community education agencies. The Minor is available to enrolled University of Pittsburgh School of Nursing graduate students. Students should consult with their academic advisor.

Graduates may be eligible for the Certified Nurse Education Exam offered by the National League of Nursing (NLN) (Note: visit the NLN website for eligibility requirements)

Curriculum Format

- Part-time (~ 4-5 terms)
- 330 practicum hours
Program Outcomes

Graduates of the Minor in Nursing Education are prepared to:

- Design current, progressive nursing education programs using research and theories of learning instruction, curriculum, evaluation and measurement
- Utilize a variety of teaching strategies and media appropriate to learner characteristics, instructional objectives, and nursing or health-related content
- Plan the learning activities of individuals and groups of students in clinical and didactic settings
- Guide the performance of learners in settings where nurses function as educators for nurse colleagues, students, patients, families, and communities
- Apply principles of measurement and evaluation to the development of learner assessment procedures for didactic and educational instruction
- Utilize computer technology and educational informatics as integral components of nursing education and training
- Articulate the role of the nurse educator within the health professions, schools of nursing, and community
- Perform the role of education consultant in settings where nurses, patients, families, and communities participate in education activities

Admission Criteria

- GPA ≥ 3.0 in current MSN program

Curriculum

- NURSP 2071 - DESIGN AND PROCESS OF INSTRUCTION
- NURSP 2072 - MEASUREMENT AND EVALUATION
- NURSP 2073 - PRACTICUM 1 IN NURSING EDUCATION: TEACHING AND LEARNING ASSESSMENT
- NURSP 2074 - PRACTICUM 2 IN NURSING EDUCATION: EDUCATIONAL PROGRAM MANAGEMENT

Total Credits: 12

Nursing Informatics

The Minor in Nursing Informatics is a combination of cognitive science, computer science, information science, and nursing science. It includes the development, analysis, and evaluation of information systems that support, enhance and manage patient care. Informatics nurses are involved in practice, education, research, administration, and consultation and can work in public, private, or corporate settings. Career opportunities for graduates of this specialty are numerous.

The Minor in Nursing Informatics is available to enrolled University of Pittsburgh School of Nursing graduate students. The informatics curriculum includes introduction to informatics, clinical information systems, database management, and project management courses. Students should consult with their academic advisor.

Curriculum Format

- Part-time (2-3 terms)
- 11 course credits
- Online

Program Outcomes
Graduates of the Minor in Nursing Informatics are prepared to:

- Analyze clinical information systems for adoption by healthcare systems
- Manage projects in a multidisciplinary integrated healthcare informatics environment
- Consult with companies in the design of healthcare information systems
- Assist in the planning and development of informatics applications for telehealth, consumer health, and community-based care.

Curriculum

- NURSP 2075 - INTRODUCTION TO HEALTH INFORMATICS
- NURSP 2388 - DATABASE MANAGEMENT
- NURSP 2076 - CLINICAL INFORMATION SYSTEMS
- NURSP 2070 - INFORMATION TECHNOLOGY PROJECT MANAGEMENT

Total Credits: 11

Nursing Research

The Minor in Nursing Research is available to students pursuing education in advanced clinical specialty roles who want the opportunity to also obtain training pertinent to conduct and coordinate clinical research. Students should consult with their academic advisor. The curriculum focuses on research methodology and statistics. The Minor will enable graduates to apply their clinical and research skills in the following types of positions: clinical trial interventionists, research consultants, adverse events coordinators, and research project managers.

Graduates of the Minor in Nursing Research are eligible for National Certification as a Certified Clinical Research Coordinator by the Association of Clinical Research Professionals (ACRP) after successful completion of the Clinical Research Coordinator (CRC) Certification Exam. (Note: clinical research coordinator experience is required for exam).

Curriculum Format

- Part-time (~ 4 terms)
- Onsite

Program Outcomes

Graduates of the Minor in Nursing Research are prepared to accomplish the following:

- Apply research principles to the management of clinical investigations
- Participate in the research process including the development of reviews of literature, research protocols, and human subjects protection protocols
- Participate in recruitment of research subjects, data collection, and dissemination of research findings
- Utilize computer technology and informatics as an integral component of a research program or project
- Articulate the role of the clinical researcher within the health professions and society
- Perform the role of nurse researcher within clinical research settings

Curriculum

- Elective - (approval by Coordinator, Nursing Research Concentration) 3 cr.
- NUR 2011 - APPLIED STATISTICS FOR EVIDENCE-BASED PRACTICE
- NURSP 2075 - INTRODUCTION TO HEALTH INFORMATICS
Adult-Gerontology Acute Care Nurse Practitioner

Post-Professional Adult-Gerontology Acute Care Nurse Practitioner

This non-degree certificate curriculum is designed for nurse practitioners or clinical nurse specialists with a previous Master of Nursing or Doctor of Nursing Practice (DNP) degree who are seeking to expand their roles via nurse practitioner certification in Adult-Gerontology Acute Care. This certificate requires 24 credits and can be completed onsite or online.

Program Outcomes

Graduates of the AG-ACNP Post-Professional Certificate are prepared to accomplish the following:

• Assume responsibility for promoting, maintaining and restoring health to acutely/critically or complex chronically ill adults and older adults
• Identify health risks, promote wellness, and diagnosis and manage acute and chronic illness
• Participate in multi-disciplinary research and provide leadership in mobilizing health services

Admission Criteria

• Valid registered nurse license in state where clinical experiences are performed
• Minimum of one year nursing experience recommended
• BSN required
• Previous MS, MSN or DNP as a NP or CNS (from accredited program (ACEN, NLN, ACICS, or CCNE)
• GPA ≥ 3.0 in the MS, MSN or DNP degree
• Pre-admission interview
• Complete online application
• International applicants: see www.nursing.pitt.edu and www.ois.pitt.edu
• Spring Term Admission Only

Courses with a "D" can be delivered synchronously via distance technology. Such courses are open only to qualified on-site students as per Policy 438

Curriculum

• NUR 2044 - NURSING GRADUATE ORIENTATION MODULE
• NURNP 2100 / NURNP 2100D - MANAGEMENT OF ADULT WITH EPISODIC/CHRONIC HEALTH PROBLEMS IN ACUTE CARE THEORY
• NURNP 2101 - MANAGEMENT OF ADULT EPISODIC/CHRONIC HEALTH PROBLEMS IN ACUTE CARE CLINICAL **
• NUR 2680 / NUR 2680D - INTRODUCTION TO GENETICS AND MOLECULAR THERAPUTICS
• NURNP 2104 / NURNP 2104D - MANAGEMENT OF COMPLEX HEALTH PROBLEMS OF THE ACUTELY AND CRITICALLY ILL ADULT
• NURNP 2526 / NURNP 2526D - MANAGEMENT: GERIATRIC HEALTH
• NURNP 2102 / NURNP 2102D - MANAGEMENT OF COMPLEX HEALTH PROBLEMS OF THE ACUTELY AND CRITICALLY ILL ADULT 2
• NURNP 2028 - ROLE PRACTICUM **
Choose one of the following:

- NURNP 2105 - CLINICAL EMPHASIS - CARDIOPULMONARY
- NURNP 2106 - CLINICAL EMPHASIS - CRITICAL CARE
- NURNP 2107 - CLINICAL EMPHASIS - ONCOLOGY
- NURNP 2109 - CLINICAL EMPHASIS - DIRECTED STUDY
- NURNP 2194 - CLINICAL EMPHASIS: TRAUMA EMERGENCY PREPAREDNESS
- Comprehensive Exam

Note

** Dependent on the individual's previous role, population of patients and years of experience, up to 300 clinical hours may be completed through the option of credit by course examination."

The total credits required will vary based on evaluation of the student's previous coursework. Additional coursework may be required and/or credit may be given for previous coursework that meets the core curriculum requirements.

Total Credits: 24

Certificate in Gerontology for Nurse Practitioners

The Post-Professional Certificate in Gerontology for Nurse Practitioners is a non-degree certificate designed for graduate-prepared Family, Adult Primary Care, Psychiatric Mental Health Primary Care, and Adult Acute Care Nurse Practitioners who seek to increase their formal education as a principal provider of primary health care in the care of older adults.

The curriculum includes a total of 15 credits; nine (9) credits of core advanced nursing practice and six (6) approved elective credits. The core advanced nursing practice courses are specifically designed to enable the Nurse Practitioner to increase their capacity in the complex care of older adults. The curriculum includes a clinical practicum to provide students with the opportunity to synthesize and integrate concepts learned in the delivery of primary health care to older adults across a variety of settings.

Students will select six (6) credits of elective courses related to their career goals or interests (taught through other departments).

Upon successful completion of all requirements students will receive a Certificate in Gerontology for Nurse Practitioners. Certificate in Gerontology for Nurse Practitioners will appear on the student transcript.

Graduates will increase their marketability across health care settings with expertise in geriatrics and will enhance their clinical practice to better meet the complex health care needs of our aging population.

Curriculum Format

- 100% online delivery (no onsite campus requirements)
- Part time (2-3 terms)
- 15 credits (includes 180 practicum hours in student's locale)
- Fall term admission

Program Outcomes

Graduates of the Certificate in Gerontology for Nurse Practitioners will be prepared to:

- Apply advanced knowledge about gerontology and geriatrics, and specialized knowledge of aging and the aging process
Bring expertise to the NP role that includes the diagnosis and management of acute, chronic, and preventive health care needs of the older adult population
Collaborate with and lead inter-disciplinary health care teams in the care of older adults.

Admission Criteria

Current RN license in U.S. state/territory where student will complete practicum requirement
≥ 3.0 GPA in MSN or DNP as a Family, Adult Primary Care, Psychiatric Mental Health Primary Care, or Adult Acute Care NP program from ACEN, NLN, ACICS, or CCNE accredited program
Pre-admission interview
Short essay

Core Advance Nursing Practice (Required): 9 Credits

NURNP 2526 - MANAGEMENT: GERIATRIC HEALTH THEORY
NURNP 2527 - ADVANCED MANAGEMENT: COMPLEX GERIATRIC HEALTH ISSUES
NURNP 2528 - SEMINAR IN GERIATRIC CARE
NURNP 2529 - GERONTOLOGY CLINICAL PRACTICUM

Electives: 6 Credits

Choose two courses from the following:

GERON 2001 - ETHICS AND AGING
GERON 2002 - PREVENTION AND HEALTHY AGING
GERON 2004 - MENTAL HEALTH AND MENTAL ILLNESS IN LATE-LIFE
GERON 2005 - PERSPECTIVES IN AGING
GERON 2006 - MULTI-DISCIPLINARY ASPECTS OF DEMENTIA
GERON 2008 - HUMAN PERFORMANCE, NUTRITION AND AGING
GERON 2009 - AGING AND COMMUNICATION

Course Offerings

Fall Term

NURNP 2526 - MANAGEMENT: GERIATRIC HEALTH THEORY

Elective Options:
GERON 2001 - ETHICS AND AGING
GERON 2004 - MENTAL HEALTH AND MENTAL ILLNESS IN LATE-LIFE
GERON 2008 - HUMAN PERFORMANCE, NUTRITION AND AGING

Spring Term

NURNP 2527 - ADVANCED MANAGEMENT: COMPLEX GERIATRIC HEALTH ISSUES
NURNP 2528 - SEMINAR IN GERIATRIC CARE

Elective Options:
GERON 2002 - PREVENTION AND HEALTHY AGING
GERON 2005 - PERSPECTIVES IN AGING
Gerontology for Nurse Practitioners

This certificate is intended for nurse practitioners who are seeking to increase their knowledge about the care of older adults. Content on the diagnosis and management of health problems in older adults is offered through a combination of didactic and clinical learning experiences.

Health Care Genetics

This certificate is designed for the health care worker with a Master's Degree who is seeking a focus in Genetics. The certificate can be completed on a part-time basis. A total of 15 credits are required for this certificate.

Neonatal Nurse Practitioner

The Neonatal Nurse Practitioner (NNP) Post-Professional Certificate is designed for graduate prepared nurse practitioners who are seeking to expand their roles via nurse practitioner certification in neonatal critical care. The NNP is prepared to manage the health care of high-risk infants, their families and children up to 2 years of age. This expanded role is performed in collaboration with neonatologists and other pediatric clinicians. NNP are primarily employed in neonatal intensive care units (NICUs) and are involved in coordinating and managing care for infants with chronic health problems and providing continuity for these children from hospital to home.

The NNP curriculum provides students with course work and clinical experiences focusing on the care and management of critically ill and convalescent premature and full-term infants. The sequence of courses provides for a logical building of the clinical decision making skills necessary to function as a NNP. Clinical experiences may be in a variety of clinical settings which include newborn nurseries, intensive care nurses of various levels and out-patient clinics.

Graduates are prepared to perform acts of medical diagnosis and prescribe medical therapeutics and corrective measures. In addition, the NNP selects and performs clinically advanced diagnostic and therapeutic invasive procedures on newborns in the intensive care setting.

Graduates are eligible for both legal certification as a Certified Registered Nurse Practitioner (CRNP) and prescriptive authority by the Commonwealth of Pennsylvania, as well as other states and national professional certification as an NNP offered by the National Certification Corporation.

Curriculum Format

- Full-time or Part-time (length depends on prior academic preparation)
- 600 clinical hours (minimum)

Program Outcomes

Graduates of the Post-Professional NNP area of concentration are prepared to accomplish the following:

- Assume responsibility for promoting, maintaining, and restoring health to infants from the newborn period up to 2 years of age
- Identify health risks, promote wellness, and diagnosis and manage acute and chronic illness
- Participate in research and provide leadership in mobilizing health care resources in the community
Admission Criteria

- MSN or DNP preparation as a nurse practitioner
- A baccalaureate degree in nursing from an accredited program (ACEN, NLN, ACICS, or CCNE)
- Valid registered nurse license in the state where clinical experiences are performed
- Equivalent of 2 year full-time, recent (within past 5 years) practice experience as a registered nurse in the care of critically ill newborns, infants or children in critical inpatient settings, primarily in Level III or IV NICU. Applicants must have acquired this experience or be currently employed in the indicated settings
- Competitive GPA from graduate nursing degree
- Official GRE scores (may be waived if GPA from graduate nursing degree was ≥ 3.5)
- Prerequisite statistics course
- Pre-admission interview
- Complete online application

*International applicants: see www.nursing.pitt.edu and www.ois.pitt.edu*

Curriculum

- NURNP 2028 - ROLE PRACTICUM
- NURNP 2570 - COMPREHENSIVE NEONATAL ASSESSMENT THEORY
- NURNP 2571 - GENERAL MANAGEMENT OF THE SICK NEONATE - THEORY
- NURNP 2572 - GENERAL ASSESSMENT AND MANAGEMENT OF THE SICK NEONATE - CLINICAL
- NURNP 2573 - NEONATAL DISEASE PROCESS 1 - THEORY
- NURNP 2574 - NEONATAL DISEASE PROCESS 2 - THEORY

Total Credits: 25 (minimum)

The total credits required will vary based on evaluation of the student's previous coursework.

Nursing Education Certificate

The Post-Professional Certificate in Nursing Education combines didactic courses and two field-based preceptorships in settings and roles of the student's interest. The curriculum prepares students to apply instructional theory and research in the following types of educational settings and roles: schools of nursing, health care agency staff development, continuing education departments, advanced practice nursing and patient and community education agencies. The Minor in Nursing Education is also available to University of Pittsburgh School of Nursing graduate students. Students should consult with their academic advisor.

Graduates may be eligible for the Certified Nurse Education Exam offered by the National League of Nursing (NLN) (Note: visit the NLN website at www.nln.org for eligibility requirements)

Program Outcomes

- Graduates of the Post-Professional Certificate in Nursing Education are prepared to:
  - Design current, progressive nursing education programs using research and theories of learning instruction, curriculum, evaluation and measurement
  - Utilize a variety of teaching strategies and media appropriate to learner characteristics, instructional objectives, and nursing or health-related content
  - Plan the learning activities of individuals and groups of students in clinical and didactic settings
  - Guide the performance of learners in settings where nurses function as educators for nurse colleagues, students, patients, families, and communities
Apply principles of measurement and evaluation to the development of learner assessment procedures for didactic and educational instruction

Utilize computer technology and educational informatics as integral components of nursing education and training

Articulate the role of the nurse educator within the health professions, schools of nursing, and community

Perform the role of education consultant in settings where nurses, patients, families, and communities participate in education activities

Admission Criteria

- Valid registered nurse license in state where clinical experiences are performed
- GPA ≥ 3.0 in MSN or DNP Degree (from accredited program (ACEN, NLN, ACICS, or CCNE)
- Pre-admission interview
- Complete online application
- International applicants: see www.nursing.pitt.edu and www.ois.pitt.edu
- Fall, Spring, Summer Term admission

Curriculum

- Elective (per approval of Coordinator) 3 cr.
- NURSP 2071 - DESIGN AND PROCESS OF INSTRUCTION
- NURSP 2072 - MEASUREMENT AND EVALUATION
- NURSP 2073 - PRACTICUM 1 IN NURSING EDUCATION: TEACHING AND LEARNING ASSESSMENT
- NURSP 2074 - PRACTICUM 2 IN NURSING EDUCATION: EDUCATIONAL PROGRAM MANAGEMENT

Total Credits: 15

Nursing Informatics

The Post-Professional Certificate in Nursing Informatics is a combination of cognitive science, computer science, information science, and nursing science. It includes the development, analysis, and evaluation of information systems that support, enhance and manage patient care. Informatics nurses are involved in practice, education, research, administration, and consultation and can work in public, private, or corporate settings. Career opportunities for graduates of this specialty are numerous.

The curriculum includes course work in introduction to informatics, clinical information systems, and project management. Practicums are designed to enhance the students' knowledge and skill set through active participation in a selected informatics role.

Graduates of the Post-Professional Certificate in Nursing Informatics may be eligible for the Nursing Informatics Certification Exam, offered by the American Nurses Credentialing Center (ANCC) and the Certified Associate in Health Information & Management Systems (CAHIMS) or Certified Professional in Healthcare Information & Management Systems (CPHIMS), offered by Healthcare Information and Management Systems (HIMMS). (Note: Visit the ANCC and HIMSS websites for eligibility requirements.)

Curriculum Format

- Part-time (~ 4 terms)
- 240 practicum hours (minimum)
- 15 course credits
- Online only

Program Outcomes
Graduates of the Post-Professional Certificate in Nursing Informatics are prepared to:

- Analyze clinical information systems for adoption by healthcare systems
- Manage projects in a multidisciplinary integrated healthcare informatics environment
- Consult with companies in the design of healthcare information systems
- Plan and develop informatics applications for telehealth, consumer health, and community-based care.

Admission Criteria

- Valid registered nurse license in state where clinical experiences are performed
- 3.0 or higher in MSN, DNP or higher nursing degree (from accredited program (ACEN, NLN, ACICS, or CCNE)
- Satisfactory resume
- Pre-admission interview
- Complete online application
- International applicants: see Pitt's Office of International Services
- Fall Term Admission

Admission of International Applicants

Applications from international students are reviewed according to the admission criteria stated above, and admissions deadlines for all programs are available online. The on-line application must be completed in English. See the School of Nursing International Applicants page for specific admission requirements for international applicants.

Curriculum

- NURSP 2075 - INTRODUCTION TO HEALTH INFORMATICS
- NURSP 2076 - CLINICAL INFORMATION SYSTEMS
- NURSP 2070 - INFORMATION TECHNOLOGY PROJECT MANAGEMENT
- NURSP 2085 - NURSING INFORMATICS PRACTICUM 1
- NURSP 2086 - NURSING INFORMATICS PRACTICUM 2

Total Credits: 15

Nursing Research

The online Certificate in Nursing Research is a non-degree certificate for nurses with a Bachelor's degree who are seeking a focus on research as well as current graduate students and nurses with a Masters or DNP degree. This certificate particularly targets nurses interested in advancing their knowledge and skills as clinical research coordinators and quality assurance managers. The curriculum builds upon the students' existing research knowledge and skills and enhances their expertise to conduct and coordinate clinical research studies following federal regulations and Good Clinical Practice (GCP). Graduates broaden their marketability in a variety of clinical research settings.

Graduates of the Certificate in Nursing Research are eligible for National Certification as a Certified Clinical Research Coordinator by the Association of Clinical Research Professionals (ACRP) after successful completion of the Clinical Research Coordinator (CRC) Certification Exam. (Note: clinical research coordinator experience is required for the exam).

Admission Criteria

- Valid registered nurse license in state where clinical experiences are performed
- ≥ 3.0 GPA in BSN from accredited program (ACEN, NLN, ACICS, or CCNE)
- Minimum of one year nursing experience recommended
- Official GRE scores (may be waived if GPA ≥ 3.5)
- Prerequisite statistics course
- Pre-admission interview
- Complete online application
- International applicants

Admission of International Students

Applications from international students are reviewed according to the admission criteria stated above, and admissions deadlines for all programs are available online. The on-line application must be completed in English. See the School of Nursing International Applicants page for specific admission requirements for international applicants.

Curriculum Format

- Part-time (~ 5 terms)
- Fall, Spring, Summer Term admission
- Online

Curriculum

- Elective (approval by Coordinator, Nursing Research Concentration 3 cr.
- Module CITI Biomedical Responsible Conduct of Research 0 cr.
- Module CITI Biomedical Human Subjects Research 0 cr.
- Module CITI Conflicts of Interest 0 cr.
- Module CITI Good Clinical Practice 0 cr.
- Module CITI Clinical Research Coordinator 0 cr.
- Module CITI Privacy and Information Security 0 cr.
- Module ISER Responsible Literature Searching 0 cr.
- NUR 2000 - RESEARCH FOR EVIDENCE-BASED PRACTICE 1
- NUR 2008 - ETHICS FOR ADVANCED PRACTICE NURSING
- NUR 2011 - APPLIED STATISTICS FOR EVIDENCE-BASED PRACTICE
- NUR 2044 - NURSING GRADUATE ORIENTATION MODULE
- NUR 2800 - COORDINATING CLINICAL TRIALS
- NUR 3052 - MANUSCRIPT DEVELOPMENT
- NURSP 2075 - INTRODUCTION TO HEALTH INFORMATICS
- NURSP 2388 - DATABASE MANAGEMENT

Note

Graduates of the Certificate in Nursing Research are prepared to accomplish the following:

- Conduct and coordinate clinical studies sponsored by the federal government, industry, and foundations for phase I, II, and III studies of drugs, devices, and biologics as well as behavioral interventions across the lifespan
- Pursue employment as quality assurance managers, clinical research coordinators or monitors in Schools of the Health Sciences, Pharmaceutical Companies, Clinical Research Organizations, Institutional Review Boards, Education and Compliance Offices, and other research settings
Total Credits: 16

Post-Baccalaureate Health Care Genetics

This curriculum is designed for Bachelor's Degree prepared individuals who are seeking focused, graduate-level education in the specialty of genetics. Knowledge gained through coursework will enable health care workers to better care for and educate their patients. The curriculum consists of two courses (6 credits) taught through the School of Nursing (Introduction to Genetics and Molecular Therapeutics and Advanced Topics in Human Genetics) and 9 credits taught through other departments in the Schools of the Health Sciences (selected to meet the student's career goals or interests). A total of 15 credits are required for this certificate.

In addition to the courses, learning experiences may be enriched through the availability of Clinical Genetics Case Conferences, Human Genetics Research Seminar, Human Genetics Journal Club, Genetics Grand Rounds, and a Research Practicum in a molecular genetics laboratory.

Genetic based health care is routinely becoming a part of daily health care, having major impacts on patient diagnosis, prognosis and treatment. The Post-Bachelors Certificate in Health Care Genetics is designed for health care workers who are seeking focused, graduate-level education in the specialty of genetics. Knowledge gained through coursework will enable healthcare workers to better care for and educate their patients.

Admission Criteria

- Healthcare worker with a Bachelor's Degree
- GPA ≥ 3.0 in the Bachelor's Degree
- Pre-admission interview
- Complete online application
- International applicants
- Fall, Spring, Summer Term Admission

Curriculum

The curriculum includes courses in genetics (taught through the School of Nursing) and choice of 3 courses related to the student's career goals or interests (taught through other departments in the Schools of the Health Sciences). Learning experiences may be enriched through Clinical Genetics Case Conferences, Human Genetics Research Seminar, Human Genetics Journal Club, Genetics Grand Rounds, and a Research Practicum in a molecular genetics laboratory.

- Full-time or Part-time (~ 3 terms)
- Electives (per approval of Coordinator) 9 cr.
- NUR 2680 - INTRODUCTION TO GENETICS AND MOLECULAR THERAPEUTICS
- NUR 2681 - ADV TOPICS IN HUMAN GENETICS

Total Credits: 15

Program Outcomes

Graduates of the Post-Bachelors Certificate in Health Care Genetics are prepared to:

- Guide patients in their understanding of the genetic basis of disease as well as providing patient education and guidance in the areas of available genetic testing, interpretation of testing, recurrence risks, and genetic based therapies
- Provide advocacy for patients and families with genetic conditions
- Utilize family histories to determine disorders for which the patient is at risk
- Utilize a variety of resources to stay up to date with advances in genetic based medicine
- Determine when patient referral to a genetic professional is required
Utilize a variety of resources to provide patients and their families with support mechanisms
Interpret genetic research findings

Psychiatric Mental Health Nurse Practitioner

The Psychiatric Mental Health Nurse Practitioner Post-Professional Certificate is designed for graduate prepared Nurse Practitioners (NP) or Clinical Nurse Specialists (CNS) who are seeking to expand their roles via nurse practitioner certification in Psychiatric Mental Health Care.

The curriculum includes foundational and psychiatric care content providing students with the advanced practice skills to effectively manage persons with psychiatric disorders across the lifespan. Emphasis is placed on psychobiologic diagnosis and treatment, including psychotherapies for these individuals and their families to promote mental health and prevent subsequent mental disorders.

Clinical experiences are designed so that students provide comprehensive management to psychiatric clients with mental illness in intensive and varied clinical experiences. Culminating clinical management practice provides students with the opportunity to synthesize and integrate concepts from primary health care with their psychiatric knowledge base.

Graduates are eligible for legal certification and prescriptive authority in the Commonwealth of Pennsylvania and professional certification offered by the American Nurses Credentialing Center (ANCC).

Curriculum Format

- Full-time or Part-time (length depends on prior academic preparation)
- 640 clinical hours (length depends on prior academic preparation)

Program Outcomes

Graduates of the PMHNP are prepared to accomplish the following:

- Provide comprehensive care to psychiatric clients
- Conduct psychotherapies for psychiatric clients and their families

Admission Criteria

- Valid registered nurse license (all students must obtain a Pennsylvania license)
- Previous MS or MSN as a NP or CNS (from accredited program (ACEN, NLN, ACICS, or CCNE)
- GPA ≥ 3.0 in the MS or MSN degree
- Official GRE scores (may be waived if GPA ≥ 3.5)
- Minimum of one year nursing experience recommended
- Prerequisite statistics course
- Pre-admission interview
- Complete online application
- International applicants: see www.nursing.pitt.edu and www.ois.pitt.edu
- Rolling admissions

Curriculum

*Courses with a "D" can be delivered synchronously via distance technology. Such courses are open only to qualified on-site students as per Policy 438.

- NURNP 2026 / NURNP 2026D - ROLE SEMINAR 1*
• NURNP 2029 / NURNP 2029D - ROLE SEMINAR 2*
• NURNP 2320 - NEUROBIOLOGY OF PSYCHIATRIC DISORDERS
• NURNP 2325 - PSYCHOPHARMACOLOGY
• NURNP 2330 - PSYCHIATRIC DIAGNOSIS THEORY
• NURNP 2331 - PSYCHIATRIC DIAGNOSIS PRACTICUM
• NURNP 2340 - MANAGEMENT OF ACUTE HEALTH PROBLEMS OF PSYCHIATRIC PATIENTS
• NURNP 2341 - MANAGEMENT PRACTICUM OF ACUTE HEALTH PROBLEMS OF PSYCHIATRIC PATIENTS
• NURNP 2345 - MANAGEMENT OF CHRONIC HEALTH PROBLEMS OF PSYCHIATRIC PATIENTS
• NURNP 2346 - MANAGEMENT PRACTICUM CHRONIC HEALTH PROBLEMS OF PSYCHIATRIC PATIENTS
• NURNP 2520 / NURNP 2520D - MGT: PEDIATRIC HEALTH THEORY*
• NURNP 2521 - MANAGEMENT: PEDIATRIC HEALTH CLINICAL
• NURNP 2540 / NURNP 2540D - PEDIATRIC WELL CHILD CARE THEORY*
• NURNP 2526 / NURNP 2526D - MANAGEMENT: GERIATRIC HEALTH*
• NURCNS 2350 - GROUP THERAPY THEORY / NURCNS 2351 - GROUP THERAPY PRACTICUM or NURCNS 2352 - FAMILY THEORY/THERAPY TECHNIQUES / NURCNS 2353 - FAMILY THERAPY ROLE SEMINAR AND CLINICAL PRACTICUM
• NURCNS 2354 / NURCNS 2354D - INDIVIDUAL PSYCHOTHERAPY THEORY* / NURCNS 2355 - INDIVIDUAL PSYCHOTHERAPY PRACTICUM

School of Nursing Faculty

Full-Time Faculty

• Susan A. Albrecht, PhD, University of Pittsburgh
• Sheila A. Alexander, PhD, University of Pittsburgh
• Salah S. Al-Zaiti, PhD, University of Buffalo
• Michael D. Beach, DNP, University of Pittsburgh
• Catherine M. Bender, PhD, University of Pittsburgh
• Alice M. Blazeck, DNSc, University of Pennsylvania
• Betty J. Braxter, PhD, University of Pittsburgh
• Marnie L. Burkett, DNP, Chatham University
• Judith A. Callan, PhD, University of Pittsburgh
• Grace B. Campbell, PhD, University of Pittsburgh
• Mark A. Cantrell, DNP, University of Pittsburgh
• Brenda L. Cassidy, DNP, University of Pittsburgh
• Denise Charron-Prochownik, PhD, University of Michigan
• Eileen R. Chasens, PhD, University of Alabama at Birmingham
• Ji Yeon Choi, PhD, University of Pittsburgh
• Susan M. Cohen, PhD, University of Alabama at Birmingham
• Tim M. Coleman, DNP, Carlow University
• Yvette P. Conley, PhD, University of Pittsburgh
• Rose E. Constantino, PhD, University of Pittsburgh
• Elizabeth A. Crago, PhD, University of Pittsburgh
• Cynthia A. Danford, PhD, University of California, San Francisco
• Marilyn A. Davies, PhD, University of Pittsburgh
• Jason J. Dechant, PhD, University of Pittsburgh
• Jill R. Demirci, PhD, University of Pittsburgh
• Annette J. DeVito Dabbs, PhD, University of Pittsburgh
• Heidi A. Donovan, PhD, University of Wisconsin-Madison
• Janice S. Dorman, PhD, University of Pittsburgh
• Willa M. Doswell, PhD, New York University
• Jacqueline M. Dunbar-Jacob, PhD, Stanford University
• Sandra J. Engberg, PhD, University of Pittsburgh
• Judith A. Erlen, PhD, Texas Woman's University
• Becky L. Faett, PhD, University of Pittsburgh
• Christine A. Feeley, PhD, University of Alabama at Birmingham
• Laura A. Fennimore, DNP, University of Pittsburgh
• Lisa Y. Foertsch, DNP, University of Pittsburgh
• Sandra A. Founds, PhD, University of Massachusetts
• Catherine Grant, DNP, Chatham University
• Jane Guttendorf, DNP, University of Pittsburgh
• Teresa L. Hagan, PhD, University of Pittsburgh
• Alice J. Haines, DNP, University of Pittsburgh
• Richard A. Henker, PhD, University of Washington
• Rosemary L. Hoffmann, PhD, University of Pittsburgh
• Marilyn T. Hravnak, PhD, University of Pittsburgh
• Chris C. Imes, PhD, University of Washington
• Jacob K. Kariuki, PhD, University of Massachusetts
• Robert R. Kaufman, PharmD, Duquesne University
• Linda K. Kelly, JD, Duquesne University
• Julius M. Kitutu, PhD, University of Pittsburgh
• Lisa M. Kreashko, DNP, University of Pittsburgh
• Claudia M. Kregg-Byers, PhD, University of Pittsburgh
• Heeyoung Lee, PhD, University of Washington
• Young Ji Lee, PhD, Columbia University
• Dan Li, PhD, University of Miami
• Rachel M. Libman, DNP, Chatham University
• Jennifer H. Lingler, PhD, University of Pittsburgh
• Faith S. Luyster, PhD, Kent State University
• Kathy S. Magdic, DNP, University of Pittsburgh
• Grant R. Martsof, PhD, Penn State University
• Judith T. Matthews, PhD, University of Pittsburgh
• Geraldine M. Maurer, DNP, Waynesburg University
• Judith A. Mermigas, DNP, Case Western Reserve University
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• Ann M. Mitchell, PhD, University of Pittsburgh
• Donna G. Nativio, PhD, University of Pittsburgh
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Susan W. Wesmiller, PhD, University of Pittsburgh
Cecelia C. Yates Binder, PhD, Tuskegee University
Judith F. Zedreck Gonzalez, DNP, University of Pittsburgh

Part-Time Faculty

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Barbara W. Brandom, MD, University of Pennsylvania
Lora E. Burke, PhD, University of Pittsburgh
Bettina A. Dixon, MSN, University of Pittsburgh
Andrea F. Fischl, PhD, University of Pittsburgh
Jason C. Fisher, DNP, University of Pittsburgh
Sharyn A. Gesmond, MSN, University of Pittsburgh
Karen V. Harrison, MSN, University of Phoenix
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Christina R. Lauderman, MSN, Robert Morris University
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Joseph G. Mattis, MSN, University of Pittsburgh
Debra S. Peitzman, MSN, University of Pittsburgh
Kathleen S. Perdziola, MSN, Kent State University
Valerie S. Swigart, PhD, University of Pittsburgh
Robin W. Tate, MBA, Waynesburg University
Jessica G. Tillia, MS, University of Pittsburgh
School of Pharmacy

Chartered in 1878, the School of Pharmacy has a tradition of developing leaders and innovators that drive the future of pharmacy. We investigate, discover, and create ways to improve patient health and, through partnerships, change practice and improve efficiency of care. We also use computational and bench research methods to discover and develop drugs and drug delivery systems, and optimize drug therapy. The School of Pharmacy leads the way in education, personalizing education and getting students to expert faster. The School of Pharmacy is among the oldest pharmacy schools in the country. Pitt Pharmacy is in the top tier of schools of pharmacy in US News & World Report rankings and NIH-funded research.

Mission
The School of Pharmacy is committed to improving health through excellence, innovation, and leadership in education of pharmacists and pharmaceutical scientists, in research and scholarship, in care of patients, and in service to our communities.

Vision
To be an outstanding school of pharmacy renowned for excellence in discovery and advancement of science-based use of medicines and other interventions to enhance the vitality and quality of life.

Values
Integrity guides our daily work. We foster:
Passion, commitment, and diligence
Creativity and personal growth
Collaboration and teamwork
A culture of respect for the individual.

Doctor of Pharmacy (PharmD) Program

The professional curriculum is composed of a course of study requiring two years (62 credits) of pre-professional study followed by four years of professional courses. The four-year professional curriculum emphasizes problem solving and critical thinking, blending classroom and laboratory learning with experiential learning in practice. The required component of experiential learning is designed to facilitate progress from initial stages of making meaningful connections with patients to caring for complex patients with acute and chronic diseases. Experiences include patient care in communities, in hospitals, and during transitions of care. This experiential education begins in the first weeks of the P1 year.

Through our commitment to personalizing education, PittPharmacy inspires students to use their unique interests and talents to improve the lives of people through the safe, effective, and responsible use of medications and other interventions.

The PharmD program prepares students to be practitioners who advance the profession by fostering innovation, leadership, interprofessional collaboration, civic engagement, advocacy, life-long learning, and a professional attitude of inclusion.

Accreditation Council for Pharmacy Education
The University of Pittsburgh School of Pharmacy's Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, IL 60503, 312/664-3575; FAX 312/664-4652, web site www.acpe-accredit.org.

Contact Information

School of Pharmacy
Admissions: 412-383-9000
E-mail: rxschool@pitt.edu
www.pharmacy.pitt.edu

Special Academic Opportunities

PittPharmacy provides opportunities to personalize students' education and get them to expert faster.
Areas of Concentration

Areas of Concentration (ARCO's) provide ways to tailor education to explore personal and professional interests. During pharmacy school, students can pursue an area of pharmacy in depth through specialized courses and experiences, mentoring, and a scholarly project. Students may apply for an ARCO during their second professional year of PharmD training. Each ARCO has specific requirements.

- Community Leadership, Innovation, and Practice
- Geriatrics and Palliative Care
- Global Health
- Pediatrics
- Pharmaconalytics
- Pharmacotherapy Scholars
- Pharmacy Business Administration
- Research

International Pharmacy Travel

Pitt student pharmacists have the opportunity to gain exposure to diverse practices of pharmacy and global cultures through international experiences.

Student-Driven Independent Study

Students work directly with a faculty member to design a unique one-on-one learning experience in the community, hospital, or laboratory. Unlike traditional electives, students play an active role in establishing the goals and parameters of the project. Check out videos by faculty who offer electives and special topic opportunities.

PharmD/PhD Combined Program

If students are committed to extending their research education, we offer a Doctor of Pharmacy/Doctor of Philosophy in Pharmaceutical Sciences (PharmD/PhD) degree program that awards both degrees through a combined curriculum.

Selecting Experiential Rotations

Students can design an individualized combination of core and elective rotations that are unique to their professional interests, talents, and goals. Students are able to choose from over 700 rotations in a wide range of pharmacy careers locally, nationally, and internationally.

Admissions

The School of Pharmacy admits students to its programs under one of two pathways—guarantee or open. Those two admission pathways are detailed below:

Pharmacy Guarantee Freshman Admission

All students should first submit an application to the University of Pittsburgh, Office of Admissions and Financial Aid. The School offers a guaranteed acceptance to a limited number of high school seniors who enroll at one of the University of Pittsburgh campuses. The number of guaranteed offers is limited and offered on a rolling basis. Students who have demonstrated academic success in high school, score 1360 or higher on the SAT I (Math and Critical Reading sections), with a minimum of 690 in the Math section, and specify Pharmacy on the application will be offered the guaranteed admission, if available.

Students who receive the guaranteed admission are expected to perform well in their pre-professional courses. In order to secure a place in the PharmD Program, students must earn:

- a letter grade of a C or better in all pre-professional courses with no repeat of pre-professional courses
- a 3.25 or greater overall GPA in pre-professional courses
- a 3.25 or greater GPA in the required Math and Science courses
- Note: Required Math and Science courses must be taken at the University of Pittsburgh (AP credits are acceptable)

To exercise the guaranteed admission, all applicants, must:

- Submit the Pharmacy College Admissions Test (PCAT) scores
- Submit a completed PharmCAS application and fee
Participate in a satisfactory interview prior to School of Pharmacy Admission

Students who meet these performance criteria will be admitted into the PharmD Program.

Open Admission

Students admitted to the program through open admission compete for remaining spaces in the class. The requirements to be considered a competitive applicant for the School of Pharmacy's professional program are:

- completion of the pre-professional requirements
- science GPA of at least 3.0
- submission of the Pharmacy College Admission Test (PCAT) scores
- submit a completed PharmCAS application and fee
- selected applicants will be required to participate in a satisfactory interview (interviews are by invitation only)

More information about PharmCAS and deadlines for application can be found at www.pharmcas.org.

Selected applicants will be required to participate in a satisfactory interview (interviews are by invitation only).

More information about PharmCAS and deadlines for application can be found at www.pharmcas.org.

Application Procedures and Deadlines

All applicants must file an application through PharmCAS, a Web-based Pharmacy College Application Service, by January 7, 2019.

The application process, application deadlines, and other admission requirements are summarized on the School of Pharmacy Web site.

Throughout the application process, it is the student's responsibility to follow all instructions and meet all deadlines. Failure to do so might result in their application being canceled. It is highly recommended that students apply early to ensure that all application materials are received by the January deadline.

Preparing to Complete the Application

The School of Pharmacy recommends that students thoroughly review the application process before entering data or filling out forms so that they are aware of all the information they will need to gather and how much time the entire process will take. Visit the PharmCAS Web site at www.pharmcas.org and review the "Preparing to Apply" tab. Then review the Checklist, PharmCAS Instructions, and the Applicant Code of Conduct links. Review the time line for the application process: Admissions Calendar

Complete Pre-professional Courses and Minimum Eligibility Requirements: Math & Science course requirements must be completed by the end of spring term of year of admission and all other courses must be completed before the fall term. NOTE: Early Decision applicants must have all of the pre-professional required course work completed and letter grades recorded on official transcripts by the PharmCAS Early Decision deadline of September 4, 2018.

Register to take the PCAT (Pharmacy College Admission Test): Visit the PCAT web site for registration deadlines for test dates and register as early as possible since the test sites have a limited number of examinee seats for each exam date. Register to take the PCAT (recommended test dates include July and/or September, October/November) and have your scores sent to PharmCAS, code 104. Applications are not complete until PCAT scores are received. Only completed applications are considered for an interview invitation. NOTE: Since the January PCAT scores will not be received until after interviews are offered, the Admissions Committee recommends an earlier PCAT testing date.

Completing the Application Process

The application process consists of one application.
PharmCAS (Pharmacy College Application Service): This service enables students to generate one primary application that can be submitted to multiple PharmD degree programs. For the University of Pittsburgh School of Pharmacy, the application must be electronically submitted on or before midnight Eastern Standard Time on January 7, 2019.

To eliminate any unforeseen problems, it is recommended that students submit their application early; i.e., November 1, 2018. This will ensure eligibility to update fall grades and, if issues arise, they can be investigated and resolved before the December deadline.

After electronically submitting the PharmCAS application and fee for the PharmD program, there are follow-up steps that applicants must address to be certain that all the required documents (such as transcripts to PharmCAS) have been received on time.

Tuition and Financial Aid

Students should investigate their eligibility for federal and state programs by calling the Office of Admissions and Financial Aid at 412-624-PITT or e-mail oafa@pitt.edu.

The University's financial advisors are the best source of information about local grants or scholarships that extend beyond federal and state programs. Students are encouraged to look outside of the health professions for additional support. Students may be able to compete successfully for economically or academically awarded scholarships from private groups and associations.

In addition, the School of Pharmacy has a number of general scholarships provided through the generosity of the School's alumni and friends. These are described in detail on the school's Web site at http://www.pages.pharmacy.pitt.edu/pharmdhandbook/the-pharmd-student-handbook/admissions/scholarships/

Tuition Rates and Fees can be found on the school's Web site at https://oafa.pitt.edu/financialaid/costs/.

Academic and Professional Standards

Academic Integrity

School of Pharmacy students are responsible for upholding the standards of behavior outlined in the University's Guidelines on Academic Integrity, the University's policy on sexual harassment, and other policies related to student behavior.

Enrollment in the School of Pharmacy carries with it obligations of conduct within and outside of the classroom. Professional students are expected to maintain the highest standards of personal integrity and conduct themselves in a manner that is a credit to themselves, the school, and the profession.

Each year, students will be asked to sign a copy of the University of Pittsburgh School of Pharmacy Code of Conduct that reaffirms their commitment to ethical and professional behavior. Details of the Code are outlined on the school's Web site.

Grading System

Doctor of Pharmacy students are subject to the provisions of the Guidelines and Regulations for the Promotion of Students in force at the time. All students will be given a copy of these guidelines and regulations upon entry into the program.

Calculation of grade point average (GPA) will include all required professional courses and approved electives taken while enrolled in the PharmD program. Cumulative GPA will be calculated at the end of each term. All PharmD students must maintain a cumulative GPA of 2.00. Students who fail to maintain a cumulative GPA of 2.00 or above will be placed on academic probation and given one opportunity to repeat selected courses in order to raise their cumulative GPA above 2.00. Students failing to increase their cumulative GPA above a 2.00 during this period of academic probation will be dismissed from the PharmD program. Term GPA will be calculated at the end of each term. Students with a term GPA under 2.00 will be placed on academic probation and must achieve a GPA of 2.00 or above during the following term. Students failing to achieve a term GPA of 2.00 or above during this period of academic probation will be dismissed from the PharmD program.
It is the responsibility of students to monitor their academic progress and become familiar with the program degree requirements and academic regulations.

**Clearance and Immunization Policy**

The Office of Experiential Learning manages learning experiences in communities and professional practice environments that are embedded across all four years of the PharmD program. Because these experiences involve direct patient contact, the practice sites where students are placed require proof of immunization to communicable diseases, fingerprinting, background checks, and drug screens. Students who fail to complete these prerequisites no later than two weeks prior to the start of classes will not be able to fulfill their experiential learning requirements. PittPharmacy works with CastleBranch, a background screening and compliance tracking solutions company, to collect and manage the documentation of all such prerequisites. Each student has access to his or her information through the secure CastleBranch web site both as a student and after graduation. CastleBranch maintains a secure site to which only the Office of Experiential Learning Office and the student have access.

A positive criminal history and/or positive drug screen may disqualify a student from completing required experiential learning and may prevent successful completion of the PharmD program. Many of the sites used for experiential learning require students to meet certain prerequisites. These prerequisites may include showing proof of immunization to communicable diseases, undergoing criminal background checks, and drug screening. Failure to meet these prerequisites can result in students being unable to complete their experiential learning requirements.

Additionally, in order to become a licensed pharmacist, many states will inquire as to whether the applicant has been convicted of any misdemeanor, felony, or any illegal act associated with alcohol and/or substance abuse. A criminal history may delay or prevent licensure.

**PhD or MS in Pharmaceutical Sciences**

The School of Pharmacy offers graduate level training to highly motivated individuals. Our mission is to train the next generation of leaders and decision makers seeking to improve the health of the community through outstanding basic and clinical research. Major strengths include highly accomplished, well-funded research faculty, multidisciplinary training opportunities, and cutting-edge technologies.

Training consists of required core courses, elective courses, journal clubs, research presentations, and an original faculty-advised research project leading to a final thesis or dissertation. Students may select to enroll in one of five Primary Tracks: medicinal chemistry, biochemical pharmacology, pharmaceutics, clinical pharmaceutical sciences, or health outcomes and policy research.

**Contact Information**

Lori Altenbaugh  
Graduate Program Coordinator  
University of Pittsburgh  
School of Pharmacy  
Pittsburgh, PA 15261  
412-648-1014  
altenbaughlm@pitt.edu

**Application Process**

Applications must be submitted electronically at the Pharmacy College Application Service for Graduate Programs (PharmGrad). Application to our program requires a $50.00 fee that cannot be waived.

Applications for the fall term must be submitted no later than January 4, 2019. Applications are reviewed on a first-come, first-served basis so it is wise to apply as early as possible. Applications for spring term admission are not accepted.

**The School of Pharmacy highly recommends that applicants to the PhD program have research experience** and that students mention specific faculty with whom they would like to work in their Personal Statement.
When complete, student applications are reviewed. No preliminary assessments are made on individuals applying to the program until all application requirements are complete. The GRE is required in order to submit your application. Subject-specific tests are not required. GRE scores are good for five years; the ETS will not release GRE scores after 5 years from the date of the exam. We do not state a minimum GRE or GPA as we prefer to look at the entire representation of the applicant. The average GRE score for those students admitted for 2017 verbal is 152 (56th percentile), quantitative is 162 (81st percentile) and analytical writing is 3.5.

We require three references that MUST be submitted online. Written references are not accepted.

IMPORTANT: WE DO NOT ACCEPT ANY DOCUMENTS SENT VIA MAIL TO OUR DEPARTMENT. You will be notified if your application is reviewed and you are invited for an interview. At that time, you will need to supply an official transcript.

International Students

For the Test of English as a Foreign Language (TOEFL), a minimum result of 100 on the iBT (Internet-based test) is required. For IELTS the minimum acceptable score is 7.0. You must submit GRE and TOEFL (or IELTS) scores to the University of Pittsburgh, institution code is 2927. You do not need a department code. TOEFL scores are good for two years; the ETS will not release TOEFL scores after 2 years from the date of the exam. If you have graduated from a U.S. institution OR if English is the official language of your country then proof of English proficiency is not required.

Financial Assistance and Tuition

Most students accepted to our PhD program are offered full tuition scholarship plus a teaching assistant stipend. Teaching assistant experience is not necessary as you will be trained upon acceptance into the program.

For the 2017-2018 academic year we granted scholarships and TA positions to 6 new admissions from a pool of approximately 74 applications. No financial assistance is available to MS students. Tuition Rates and Fees can be found on the school's Web site at https://oafa.pitt.edu/financialaid/costs/. NOTE: Health insurance is REQUIRED for all students.

All fees are the same for those students who are not offered a scholarship.

Length of Programs

The PhD Program requires a minimum of 72 credits. Most students complete the PhD degree within five years. The statute of limitations for completion of the PhD degree is ten years. (See Statute of Limitation/Leaves of Absence in the University catalog for more information.)

The MS (thesis-based) program requires a minimum of 30 credits. Most students complete the MS degree in two academic years. The statute of limitations for completing the MS degree is four consecutive calendar years from the first term of registration.

The Non-Thesis MS program requires a minimum of 34 credits and is usually completed within one calendar year (three semesters). The statute of limitations for completing the MS degree is four consecutive calendar years from the first term of registration.

Academic Standards

School of Pharmacy students are responsible for upholding the standards of behavior outlined in the University's Guidelines on Academic Integrity, the University's policy on sexual harassment, and other policies related to student behavior.

MS Pharmacy Business Administration

The 12-month executive style Master of Science in Pharmacy Business Administration (MSPBA) program consists of 36 credits that build critical skills and expertise for pharmacy professionals seeking to substantially increase their business acumen and marketability.
Contact Information

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School of Pharmacy
Pittsburgh, PA 15261
412-624-1238
Amy.Giles@pitt.edu

Application and Requirements

Prerequisite

- Two years of professional experience is recommended
- Candidates with a PharmD or BS in Pharmacy will receive preferential admission

To apply to the program, you must complete the following requirements:

- Completed Application Form (Application PDF)
- Résumé or CV
- One self-nomination letter describing:
  - Current job responsibilities and assignments
  - Finest achievements and greatest disappointments
  - Challenges met within current organization
  - Civic and community activities and any offices held
  - Reasons and motivations for entering the MSPBA program
  - Professional and personal goals and plans
- Two letters of professional reference
- College or university transcripts
- Graduate school admission exam scores (recommended)
- GMAT
- TOEFL or the IELTS examination (for anyone who speaks English as a second language)
- In-person interview with MSPBA program representatives

Applicants will be contacted for scheduling of an on-site interview following receipt of complete packet of information

Tuition and Financial Aid

Tuition
Tuition Rates and Fees can be found on the school's Web site at https://oafa.pitt.edu/financialaid/costs/. Tuition is paid in equal parts per term for three terms.

All students, including students traveling from out of town, are responsible for all travel expenses.

The MSPBA program will provide a list of hotels that offer University rates from which students can select and reserve rooms.

Financial Aid

Federal Stafford loans are available to U.S. citizens for up to $20,500 per academic year. Refer to the University's Office of Admissions and Financial Aid for information on how to apply. U.S. citizens who are funding the degree in full, in part, or whose employer reimburses only after the end of a term, may consider financing. Furthermore, students may also finance their costs through standard loans.

Tuition Includes

- All books, cases, and simulations; meals during class sessions
- Microsoft Windows and Program Bundle software packages
- Access to all University of Pittsburgh student resources such as libraries, fitness facilities, and public transportation while on campus

School of Pharmacy Faculty

School of Pharmacy Faculty

Accreditation

Accreditation Council for Pharmacy Education
The University of Pittsburgh School of Pharmacy's Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, IL 60503, 312/664-3575; FAX 312/664-4652, web site www.acpe-accredit.org.

Program and Course Offerings

Pharmaceutical Sciences - Biochemical Pharmacology Track, PhD

Biochemical Pharmacology

The biochemical pharmacology track focuses on the biochemical mechanisms responsible for drug and other xenobiotic, and gene actions on living systems, both healthy and compromised.

- You will have the opportunity to study with faculty in multiple areas including behavioral, cardiovascular and endocrine pharmacology, neuropharmacology, immunopharmacology, chemotherapy, toxicology, and metabolic diseases.
- Your research opportunities include studying the biochemical mechanism of drugs and genes in cell cultures and/or healthy and compromised animal models.
- You will have the opportunity to create and/or use genetically engineered animals that include transgenic and knockout mice, as well as to integrate disease models into the animal models in order to study the gene function in diseases.
- You will develop a broad knowledge of the regulation of drug metabolizing enzymes and transporters and the implications of this regulation in drug metabolism.
PhD Comprehensive Exam and Dissertation

Requirements:

Students must complete a total of 72 credit hours to fulfill the requirements for the PhD. Required courses for all PhD students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and dissertation research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area. For students interested in the Clinical Pharmaceutical Scientist Track, you may find the curriculum here: http://www.pharmacy.pitt.edu/research/clinical_pharma_science.php

1st Year: Fall

- PHARM 3040 - STATISTICAL METHODS
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
- PHARM 3043 - TEACH ME TO TEACH YOU
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS
- PHARM 3042 - RESEARCH PRACTICUM

1st Year: Spring

- PHARM 3023 - FOUNDATIONS IN PHARMACEUTICAL SCIENCES
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS
- PHARM 3042 - RESEARCH PRACTICUM
- Track-Specific and/or Electives. - 3-4 credits

2nd Year: Fall

- PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS
- PHARM 3038 - ESSENTIALS COMPETITIVE GRANT WRITING 1
- PHARM 3042 - RESEARCH PRACTICUM
- Track-Specific and/or Electives. - 3-4 credits

2nd Year: Spring

- PHARM 3039 - ESSENTIALS COMPETITIVE GRANT WRITING 2
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS
- PHARM 3042 - RESEARCH PRACTICUM
- Track-Specific and/or Electives. - 3-4 credits

3rd Year: Fall

- PHARM 3042 - RESEARCH PRACTICUM
PhD Comprehensive Exam and Dissertation

Each student follows a program of study developed in conjunction with the major advisor with input from the student's doctoral committee. The program of study must contain all of the program core courses as well as elective courses specific to the student's focus area.

Following completion of course work, students are required to complete a comprehensive examination. To be eligible for the comprehensive examination, students must be in full graduate status and have completed didactic course work with a minimum grade point average (GPA) of 3.00. To qualify for advancement to candidacy for the Doctor of Philosophy degree the student must pass the comprehensive examination.

Admission to PhD candidacy constitutes a promotion of the student to the most advanced stage of graduate study and provides formal approval to devote essentially exclusive attention to research and writing of the dissertation.

Each PhD student must write a dissertation that presents the results of research carried out by the student. An appropriate research project involves a substantive piece of original and independent research grounded in an appropriate body of literature. It is relevant to an identifiable field as it is currently practiced. It represents a hypothesis tested by collection and analysis of data and provides a significant contribution or advancement to that field.

See Regulations Pertaining to Doctoral Degrees for a full overview of regulations and procedures for PhD candidates.

Further information is available on the School of Pharmacy website: http://www.pharmacy.pitt.edu/programs/grad/grad_index.php.

Pharmaceutical Sciences - Clinical Pharmaceutical Scientist Track, PhD

Clinical Pharmaceutical Scientist

The clinical pharmaceutical scientist is a specialty track in which students with expertise in pharmacotherapeutics investigate both the clinical and mechanistic elements of drug therapy issues.

- You will learn experimental design, experimental methods, data analysis, and data interpretation of human-based research projects.
- You will study how research discoveries are translated into practices that promote health and prevent disease.
- You will learn the process required to implement new therapies as standards of care through human-based research projects.

PhD Comprehensive Exam and Dissertation

Requirements:

Students must complete a total of 72 credit hours to fulfill the requirements for the PhD. Required courses for all PhD students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and dissertation research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area. For students interested in the Clinical Pharmaceutical Scientist Track, you may find the curriculum here: http://www.pharmacy.pitt.edu/research/clinical_pharma_science.php

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1st Year: Spring

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• PHARM 3042 - RESEARCH PRACTICUM
• Track-Specific and/or Electives. - 3-4 credits

2nd Year: Fall

• PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
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3rd Year: Fall

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PhD Comprehensive Exam and Dissertation

Each student follows a program of study developed in conjunction with the major advisor with input from the student's doctoral committee. The program of study must contain all of the program core courses as well as elective courses specific to the student's focus area.

Following completion of course work, students are required to complete a comprehensive examination. To be eligible for the comprehensive examination, students must be in full graduate status and have completed didactic course work with a minimum grade point average (GPA) of 3.00. To qualify for advancement to candidacy for the Doctor of Philosophy degree the student must pass the comprehensive examination.

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*See Regulations Pertaining to Doctoral Degrees for a full overview of regulations and procedures for PhD candidates.*
Pharmaceutical Sciences - Medicinal Chemistry Track, PhD

Medicinal Chemistry

The medicinal chemistry track is a complex scientific discipline whose focus is to develop molecules that can impact human health by discovering, designing, synthesizing and characterizing safe and effective agents for disease therapy and diagnosis. The research involves a multidisciplinary approach encompassing chemistry and biology, and includes organic synthesis, protein and nucleic acid chemistry, natural product chemistry, computational chemistry, molecular biology, cell biology, structural biology, pharmacology and proteomics.

- You will learn to design, synthesize and characterize new medicinal agents and enhance the biological activity of existing pharmaceutical agents.
- You will learn to use computational, biophysical, structural biology and cell-based screening technologies to identify natural and synthetic compounds for pharmacological activity and to conduct structure-based drug design.
- You will isolate, characterize, and synthesize compounds based on natural products, as well as target identification for biologically active natural products.

PhD Comprehensive Exam and Dissertation

Requirements:

Students must complete a total of 72 credit hours to fulfill the requirements for the PhD. Required courses for all PhD students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and dissertation research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area. For students interested in the Clinical Pharmaceutical Scientist Track, you may find the curriculum here: http://www.pharmacy.pitt.edu/research/clinical_pharma_science.php

1st Year: Fall

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- PHARM 3042 - RESEARCH PRACTICUM

1st Year: Spring

- PHARM 3023 - FOUNDATIONS IN PHARMACEUTICAL SCIENCES
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS
- PHARM 3042 - RESEARCH PRACTICUM
- Track-Specific and/or Electives. - 3-4 credits

2nd Year: Fall

- PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
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**Pharmaceutical Sciences - Pharmaceutical Outcomes and Policy Research Track, PhD**

**Pharmaceutical Outcomes and Policy Research**

Pharmaceutical Outcomes and Policy Research (POPR) is a specialty track/program in Pharmaceutical Sciences. The POPR track will train students to investigate the impact and outcomes of pharmaceutical products, pharmacy services, and pharmaceutical policies across health care systems. The core mission of POPR is the advancement of knowledge about the safety and effectiveness of medicines, and pharmacy's role in improving population health. POPR students most often focus on patient-centered outcomes such as access, safety, quality of care, costs, and patient-reported health. Graduates will be trained to work in a broad range of settings, including: academia; pharmaceutical industry; government organizations such as FDA, AHRQ, NIH; contract research organizations; and health care systems.
You will learn epidemiological study designs, data management, data analysis, and data interpretation.
You will develop strong quantitative methodological skills in pharmaceutical outcomes and health services research.
You will apply social/behavioral theory to the study of patient, provider, and organizational behaviors as it relates to pharmaceuticals and pharmacy practice.
You will learn how pharmaceutical outcomes research is used to inform clinical practice and guide health policy decisions.

PhD Comprehensive Exam and Dissertation

Requirements

Students must complete a total of 72 credit hours to fulfill the requirements for the PhD. Required courses for all MS students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and thesis research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area.

1st Year: Fall

• BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
• EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
• EPIDEM 2185 - INTRODUCTION TO SAS
• HPM 2821 - CURRENT TOPICS IN HEALTH ECONOMICS
• PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR

Journal Club

Electives

1st Year: Spring

• BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
• BIOST 2049 - APPLIED REGRESSION ANALYSIS
• EPIDEM 2180 - EPIDEMIOLOGICAL METHODS 1
• PHARM 2003 - PHARMACOEPIDEMIOLOGY
• PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
• CLRES 3140 - INTRODUCTION TO TRANSLATIONAL RESEARCH IN HEALTH SCIENCES

Journal Club

2nd Year: Fall

• BIOST 2046 - ANALYSIS OF COHORT STUDIES
• EPIDEM 2187 - EPIDEMIOLOGICAL METHODS 2
• PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
• PHARM 3038 - ESSENTIALS COMPETITIVE GRANT WRITING 1
• PHARM 3043 - TEACH ME TO TEACH YOU

Journal Club

Social and Behavioral Theory

2nd Year: Spring
Journal Club
Electives

3rd Year: Fall

- PHARM 3042 - RESEARCH PRACTICUM

Track-Specific and/or Electives

### Pharmaceutical Sciences - Pharmaceutics Track, PhD

**Pharmaceutics**

The pharmaceutics track is concentrated on the study of the design of pharmaceutical dosage forms and their interaction with the human body. Topics included are physical pharmacy, bioanalysis, drug delivery and targeting, drug metabolism, drug transport, pharmacokinetics and pharmacodynamics.

- You will develop a thorough understanding of how to apply principles of physical pharmacy to dosage form design and optimization of drug product performance.
- You will develop the fundamentals required for design of both traditional and complex state-of-the-art drug delivery systems and skills essential for the advancement of targeted drug therapies using small molecules, proteins, peptides and other biomolecules, probiotics, and tissue engineered platforms.
- You will gain knowledge of the human body and the interaction of medications with the human body including metabolism, pharmacokinetics and pharmacodynamics.
- Your research opportunities include formulation of dosage forms, development of novel delivery systems and development of complex new therapies for site specific action, establishing novel markers for disease, study of metabolic pathways, development of bioanalytical techniques, and evaluation of absorption, distribution, and elimination of drug substances and their regulation.

**PhD Comprehensive Exam and Dissertation**

**Requirements:**

Students must complete a total of 72 credit hours to fulfill the requirements for the PhD. Required courses for all PhD students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and dissertation research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area. For students interested in the Clinical Pharmaceutical Scientist Track, you may find the curriculum here: [http://www.pharmacy.pitt.edu/research/clinical_pharma_science.php](http://www.pharmacy.pitt.edu/research/clinical_pharma_science.php)

1st Year: Fall

- PHARM 3040 - STATISTICAL METHODS
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
- PHARM 3043 - TEACH ME TO TEACH YOU
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS
- PHARM 3042 - RESEARCH PRACTICUM
1st Year: Spring

- PHARM 3023 - FOUNDATIONS IN PHARMACEUTICAL SCIENCES
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS
- PHARM 3042 - RESEARCH PRACTICUM
- Track-Specific and/or Electives. - 3-4 credits

2nd Year: Fall

- PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
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2nd Year: Spring

- PHARM 3039 - ESSENTIALS COMPETITIVE GRANT WRITING 2
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
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- PHARM 3042 - RESEARCH PRACTICUM
- Track-Specific and/or Electives. - 3-4 credits

3rd Year: Fall

- PHARM 3042 - RESEARCH PRACTICUM
- Track-Specific and/or Electives. - 3-4 credits

PhD Comprehensive Exam and Dissertation

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Pharmaceutical Sciences - Biochemical Pharmacology Track, MS

Biochemical Pharmacology

The biochemical pharmacology track focuses on the biochemical mechanisms responsible for drug and other xenobiotic, and gene actions on living systems, both healthy and compromised.

- You will have the opportunity to study with faculty in multiple areas including behavioral, cardiovascular and endocrine pharmacology, neuropharmacology, immunopharmacology, chemotherapy, toxicology, and metabolic diseases.
- Your research opportunities include studying the biochemical mechanism of drugs and genes in cell cultures and/or healthy and compromised animal models.
- You will have the opportunity to create and/or use genetically engineered animals that include transgenic and knockout mice, as well as to integrate disease models into the animal models in order to study the gene function in diseases.
- You will develop a broad knowledge of the regulation of drug metabolizing enzymes and transporters and the implications of this regulation in drug metabolism.

MS Core Curriculum

Requirements:

Students must complete a total of 30 credit hours to fulfill the requirements for the MS. Required courses for all MS students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and thesis research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area.

1st Year: Fall

- PHARM 3040 - STATISTICAL METHODS
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
- PHARM 3042 - RESEARCH PRACTICUM
Choose one of the following Journal Club Courses:
- PHARM 3000 - TOPICS IN NEUROSCIENCE
- PHARM 3009 - ADVANCES IN PHARMACEUTICAL SCIENCES
- PHARM 3036 - ADVANCES IN DRUG DELIVERY AND REGENERATIVE MEDICINE

1st Year: Spring

- PHARM 2001 - PHARMACEUTICAL ANALYSIS
- PHARM 3023 - FOUNDATIONS IN PHARMACEUTICAL SCIENCES
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3042 - RESEARCH PRACTICUM
Choose one of the following Journal Club Courses:
- PHARM 3000 - TOPICS IN NEUROSCIENCE
- PHARM 3009 - ADVANCES IN PHARMACEUTICAL SCIENCES
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS

2nd Year: Fall
PHARM 2010 - MASTER OF SCIENCE THESIS
Track-Specific and/or Electives. - 3-4 credits

2nd Year: Spring

PHARM 2010 - MASTER OF SCIENCE THESIS
Track-Specific and/or Electives. - 3-4 credits

MS Comprehensive Exam and Thesis

The thesis for the MS must represent an original research project or a comprehensive and detailed survey of some topic of current interest in the pharmaceutical sciences. It must be defended in an oral examination.

Pharmaceutical Sciences - Clinical Pharmaceutical Scientist Track, MS

Clinical Pharmaceutical Scientist

The clinical pharmaceutical scientist is a specialty track in which students with expertise in pharmacotherapeutics investigate both the clinical and mechanistic elements of drug therapy issues.

- You will learn experimental design, experimental methods, data analysis, and data interpretation of human-based research projects.
- You will study how research discoveries are translated into practices that promote health and prevent disease.
- You will learn the process required to implement new therapies as standards of care through human-based research projects.

MS Core Curriculum

Requirements:

Students must complete a total of 30 credit hours to fulfill the requirements for the MS. Required courses for all MS students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and thesis research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area.

1st Year: Fall

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- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
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- PHARM 3042 - RESEARCH PRACTICUM

Choose one of the following Journal Club Courses:

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- PHARM 3009 - ADVANCES IN PHARMACEUTICAL SCIENCES
- PHARM 3036 - ADVANCES IN DRUG DELIVERY AND REGENERATIVE MEDICINE

1st Year: Spring

- PHARM 2001 - PHARMACEUTICAL ANALYSIS
Choose one of the following Journal Club Courses:

- PHARM 3000 - TOPICS IN NEUROSCIENCE
- PHARM 3009 - ADVANCES IN PHARMACEUTICAL SCIENCES
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS

2nd Year: Fall

- PHARM 3010 - MASTER OF SCIENCE THESIS
- Track-Specific and/or Electives. - 3-4 credits

2nd Year: Spring

- PHARM 3010 - MASTER OF SCIENCE THESIS
- Track-Specific and/or Electives. - 3-4 credits

MS Comprehensive Exam and Thesis

The thesis for the MS must represent an original research project or a comprehensive and detailed survey of some topic of current interest in the pharmaceutical sciences. It must be defended in an oral examination.

**Pharmaceutical Sciences - Medicinal Chemistry Track, MS**

**Medicinal Chemistry**

The medicinal chemistry track is a complex scientific discipline whose focus is to develop molecules that can impact human health by discovering, designing, synthesizing and characterizing safe and effective agents for disease therapy and diagnosis. The research involves a multidisciplinary approach encompassing chemistry and biology, and includes organic synthesis, protein and nucleic acid chemistry, natural product chemistry, computational chemistry, molecular biology, cell biology, structural biology, pharmacology and proteomics.

- You will learn to design, synthesize and characterize new medicinal agents and enhance the biological activity of existing pharmaceutical agents.
- You will learn to use computational, biophysical, structural biology and cell-based screening technologies to identify natural and synthetic compounds for pharmacological activity and to conduct structure-based drug design.
- You will isolate, characterize, and synthesize compounds based on natural products, as well as target identification for biologically active natural products.

**MS Core Curriculum**

**Requirements:**

Students must complete a total of 30 credit hours to fulfill the requirements for the MS. Required courses for all MS students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and thesis research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area.
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1st Year: Spring

- PHARM 2001 - PHARMACEUTICAL ANALYSIS
- PHARM 3023 - FOUNDATIONS IN PHARMACEUTICAL SCIENCES
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- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS

2nd Year: Fall

- PHARM 2010 - MASTER OF SCIENCE THESIS
- Track-Specific and/or Electives. - 3-4 credits

2nd Year: Spring

- PHARM 2010 - MASTER OF SCIENCE THESIS
- Track-Specific and/or Electives. - 3-4 credits

MS Comprehensive Exam and Thesis

The thesis for the MS must represent an original research project or a comprehensive and detailed survey of some topic of current interest in the pharmaceutical sciences. It must be defended in an oral examination.

Pharmaceutical Sciences - Non -Thesis, MS

The Graduate Program in Pharmaceutical Sciences is pleased to offer the new Non-Thesis MS degree to qualified students.

Why choose the non-research based thesis?

Students will be able to complete the MS degree in one calendar year. Our MS in Pharmaceutical Sciences attracts students interested in drug discovery, delivery, and metabolism in addition to pharmacology, pharmacokinetics, and pharmacodynamics. Graduating with the MS in Pharmaceutical Sciences will prepare you for employment in pharmaceutical manufacturing plants and labs. Pharmacologically-trained professionals are involved in biotechnology, research, synthesizing and testing new compounds, in marketing and sales of pharmaceuticals and biomedical devices, and in pharmaceutical benefit management. Some areas where graduates with degrees in Pharmaceutical Sciences are sought after are Cosmetic Science, Industrial Pharmacy, and University-based laboratory areas.
Non-Thesis MS Academic Requirements for Acceptance

- A BS or BA in biochemistry, biology, chemistry, pharmacy, pharmaceutical sciences or a related field is required.
- Applications must be submitted electronically.
- We require three references that MUST be submitted online. Written references are not accepted.
- Successful applicants will be admitted for fall 2012. We do not accept Spring Admissions.
- The Graduate Record Examination (GRE) is required and must have been taken within the past three years. Subject specific tests are not required.
- International applicants with English as a second language must complete the TOEFL or IELTS. For TOEFL a minimal score of 80 (Internet-based test), 550 (Paper-based test), or 213 (Computer-based test) is required. For IELTS the minimum acceptable score is 6.5.
- You must submit GRE and TOEFL (or IELTS) scores to the University of Pittsburgh, institution code is 2927. You do not need a department code. TOEFL scores are good for two years; the ETS will not release TOEFL scores after 2 years from the date of the exam.
- If you have graduated from a U.S. institution OR if English is the official language of your country then TOEFL or IELTS scores are not required.
- IMPORTANT: WE DO NOT ACCEPT ANY DOCUMENTS SENT VIA MAIL TO OUR DEPARTMENT. You will be notified if your application is reviewed and you are invited for an interview. At that time you will need to supply an official copy of your transcript.
- Application to our program requires a $50.00 fee which cannot be waived. Credit cards are accepted. To apply, go to: http://www.pharmacy.pitt.edu/programs/grad/ms_nonthesis.php; click Apply On-line!

Program Requirements for Graduation

- 30 credits are required for graduation. A minimum of 10 credits must be taken in any given semester.
- In lieu of an original research study the student would complete a written project consisting of a comprehensive literature review of a topic of current interest in pharmaceutical sciences. The student would defend the project as an oral examination before their MS committee and major advisor.
- The MS committee will consist of the Director of the Graduate Program in Pharmaceutical Sciences, the student's major advisor and one other member of the faculty chosen by the student and major advisor and approved by the Program Director and Senior Associate Dean.
- Students would be required to attend the training courses offered by the University.
  - Small Animal Training
  - Bloodborne Pathogens Training
  - Chemical Hygiene Plan & Formaldehyde Awareness
  - Radiation Safety Course

Sample Curriculum for Non-Thesis MS

Fall Term

- PHARM 3040 - STATISTICAL METHODS
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS
- PHARM 3042 - RESEARCH PRACTICUM
- Optional Electives - 0-4 credits

Spring Term

- PHARM 3023 - FOUNDATIONS IN PHARMACEUTICAL SCIENCES
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
Pharmaceutical Sciences - Pharmaceutics Track, MS

Pharmaceutics

The pharmaceutics track is concentrated on the study of the design of pharmaceutical dosage forms and their interaction with the human body. Topics included are physical pharmacy, bioanalysis, drug delivery and targeting, drug metabolism, drug transport, pharmacokinetics and pharmacodynamics.

- You will develop a thorough understanding of how to apply principles of physical pharmacy to dosage form design and optimization of drug product performance.
- You will develop the fundamentals required for design of both traditional and complex state-of-the-art drug delivery systems and skills essential for the advancement of targeted drug therapies using small molecules, proteins, peptides and other biomolecules, probiotics, and tissue engineered platforms.
- You will gain knowledge of the human body and the interaction of medications with the human body including metabolism, pharmacokinetics and pharmacodynamics.
- Your research opportunities include formulation of dosage forms, development of novel delivery systems and development of complex new therapies for site specific action, establishing novel markers for disease, study of metabolic pathways, development of bioanalytical techniques, and evaluation of absorption, distribution, and elimination of drug substances and their regulation.

MS Core Curriculum

Requirements:

Students must complete a total of 30 credit hours to fulfill the requirements for the MS. Required courses for all MS students are listed below. Students who have had prior course work or extensive experience in a given area may be exempted from the required course at the discretion of the faculty. The remaining credit requirements are completed through elective courses and thesis research. The specific plan of study is developed by the student and their faculty advisor and committee. Courses should be selected to assure an adequate breadth of knowledge as well as depth in the student's focus area.

1st Year: Fall

- PHARM 3040 - STATISTICAL METHODS
- PHARM 3024 - PHARMACEUTICAL SCIENCES SEMINAR
- PHARM 3028 - PHARMACOLOGY AND THERAPEUTICS
- PHARM 3042 - RESEARCH PRACTICUM

Choose one of the following Journal Club Courses:

- PHARM 3000 - TOPICS IN NEUROSCIENCE
- PHARM 3009 - ADVANCES IN PHARMACEUTICAL SCIENCES
- PHARM 3036 - ADVANCES IN DRUG DELIVERY AND REGENERATIVE MEDICINE

1st Year: Spring
Choose one of the following Journal Club Courses:

- PHARM 3000 - TOPICS IN NEUROSCIENCE
- PHARM 3009 - ADVANCES IN PHARMACEUTICAL SCIENCES
- PHARM 3027 - TOPICS IN BIOPHARMACEUTICS AND PHARMACOKINETICS

2nd Year: Fall

- PHARM 2010 - MASTER OF SCIENCE THESIS
- Track-Specific and/or Electives. - 3-4 credits

2nd Year: Spring

- PHARM 2010 - MASTER OF SCIENCE THESIS
- Track-Specific and/or Electives. - 3-4 credits

MS Comprehensive Exam and Thesis

The thesis for the MS must represent an original research project or a comprehensive and detailed survey of some topic of current interest in the pharmaceutical sciences. It must be defended in an oral examination.

**Pharmacy Business Administration, MSPBA**

**MS Pharmacy Business Administration**

The 12-month executive style Master of Science in Pharmacy Business Administration (MSPBA) program consists of 36 credits that build critical skills and expertise for pharmacy professionals seeking to substantially increase their business acumen and marketability.

**MSPBA Value**

- Designed for emerging pharmacy professionals seeking executive positions.
- Obtain an in-depth understanding of the business of medicines.
- Learn to innovate and solve real-world problems.
- Focus in specialized area of either Specialty or Community Pharmacy.

**MSPBA Fit**

- Synergistically fusing the expertise of the Schools of Pharmacy and Business
- Efficiently formatted for working professionals
- Friday and Saturday every other week for 12 months.

**Requirements**
1st Semester

- BOAH 2421 - HUMN RESORC COMPETITIVE ADVNTG
- BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS
- BACC 2401 - FINANCIAL ACCOUNTING
- BMKT 2409 - MARKETING MANAGEMENT
- BMIS 2409 - INFORMATION SYSTEMS
- PHARM 5915 - EXECUTIVE HEALTHCARE INNOVATIONS
- PHARM 5914 - GRADUATE EXECUTIVE BOARDROOM

2nd Semester

- BFIN 2409 - FINANCIAL MANAGEMENT 1
- PHARM 5911 - HEALTHCARE SALES AND MARKETING
- BFIN 2410 - FINANCIAL MANAGEMENT 2
- BACC 2401 - FINANCIAL ACCOUNTING

3rd Semester

- PHARM 5921 - ADVANCED COMMUNITY PHARMACY MANAGEMENT 2
- PHARM 5923 - SPECIALTY PHARMACY MANAGEMENT 2
- PHARM 5910 - US HEALTHCARE SYSTEM
- BSPP 2409 - STRATEGIC MANAGEMENT
- PHARM 5913 - EXPERIENCE ADAPTIVE DESIGN
- BIND 2444 - MANAGEMENT SIMULATION CAPSTONE
- PHARM 5912 - LEADERSHIP AND ETHICS IN HEALTHCARE

Doctor of Pharmacy, PharmD

Doctor of Pharmacy (PharmD) Program

The professional curriculum is configured in a course of study requiring two years (62 credits) of pre-professional study followed by four years of professional courses. The four-year professional curriculum emphasizes problem solving and critical thinking, blending classroom and laboratory learning with experiential learning practice. The required component of experiential learning is designed to facilitate progress from initial stages of making meaningful connections with patients to caring for complex patients with acute and chronic diseases. Experiences include patient care in communities, in hospitals, and during transitions of care. This experiential education begins in the first weeks of your P1 year.

Through our commitment to personalizing education, PittPharmacy inspires students to use their unique interests and talents to improve the lives of people through the safe, effective, and responsible use of medications and other interventions.

The PharmD program prepares students to be practitioners who advance the profession by fostering innovation, leadership, interprofessional collaboration, civic engagement, advocacy, life-long learning, and a professional attitude of inclusion.

Program Accreditation

University of Pittsburgh's Doctor of Pharmacy Program is accredited by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, IL 60603, 312/664-3575; FAX 312/664-4652, web site www.acpe-accredit.org.
Pre-Professional Requirements

Applicants to the professional pharmacy program must have successfully completed, or be in the process of completing, all prerequisite mathematics and science subjects no later than the spring term of the year of admission. All other pre-professional courses should be completed no later than the first day of the fall term of admission. Pre-professional courses must be taken for a letter grade.

Pre-Professional Courses:

- General Biology (with lab) - 8 credits
- General Chemistry (with lab) - 8 credits
- Organic Chemistry (with lab) - 8 credits
- English Composition - 6 credits
- Calculus - 3-4 credits
- Statistics - 3-4 credits
- Elective courses+ - 24 credits

Total: 60-62 credits

*Freshman Studies, 1 credit, is recommended for University of Pittsburgh freshmen.

+At least 12 credits must be in the humanities and 12 credits in the social sciences. A course in Public Speaking is recommended.

Non-native English-speaking applicants must supply evidence of their proficiency in the English language.

Degree Requirements

To earn the degree of Doctor of Pharmacy, the student must demonstrate satisfactory achievement in required course work prescribed by the curriculum (detailed below under Program Description), earning an overall GPA of 2.00 or higher. Refer to the school's Student Handbook for the guidelines for academic progress.

Program Description

The professional curriculum leads to the Doctor of Pharmacy (PharmD) degree and requires completion of 132.5 credits (note: this curriculum is subject to change):

Fall Term-First Professional Year (P-1)

- PHARM 5110 - PHARMACIST PATIENT CARE 1: PROCESS AND SKILLS
- PHARM 5112 - COMMUNITY HEALTH 1: COMMUNICATION AND WELLNESS
- PHARM 5114 - ANATOMY AND PHYSIOLOGY 1
- PHARM 5116 - BIOCHEMISTRY 1
- PHARM 5118 - PRINCIPLES OF DRUG ACTION
- PHARM 5120 - THE EMERGING PROFESSIONAL
- PHARM 5122 - CASE CONFERENCE SERIES 1

Total: 16 credits

Spring Term-First Professional Year (P-1)
- PHARM 5111 - PHARMACIST PATIENT CARE 2: SKILLS AND ENVIRONMENTS
- PHARM 5113 - COMMUNITY HEALTH 2: CULTURAL AWARENESS AND BEHAVIOR
- PHARM 5115 - ANATOMY AND PHYSIOLOGY 2
- PHARM 5117 - BIOCHEMISTRY 2
- PHARM 5219 - DOSAGE FORM DESIGN AND DELIVERY

PHARM 5123 - Case Conference Series 2 (1 credit)

Total: 16 credits

Fall Term-Second Professional Year (P-2)

- PHARM 5210 - NONPRESCRIPTION THERAPIES AND SELF-CARE PRACTICE
- PHARM 5212 - COMMUNITY PHARMACIST PRACTICE 1: PATIENT-CENTERED CARE AND SILVER SCRIPTS
- PHARM 5214 - PHARMACOTHERAPY OF INFECTIOUS DISEASE 1
- PHARM 5216 - PHARMACOTHERAPY OF CARDIOVASCULAR DISEASE
- PHARM 5218 - PHARMACOKINETICS AND DRUG RESPONSE
- PHARM 5220 - CASE CONFERENCE SERIES 3

Total: 16 credits

Spring Term-Second Professional Year (P-2)

- PHARM 5211 - DRUG LITERATURE ANALYSIS AND EVALUATION
- PHARM 5213 - COMMUNITY PHARMACIST PRACTICE 2: MEDICATION THERAPY MANAGEMENT- IMMERSION IN PRACTICE
- PHARM 5215 - PHARMACOTHERAPY OF INFECTIOUS DISEASE 2
- PHARM 5119 - DRUG DEVELOPMENT 1
- PHARM 5223 - GASTROENTEROLOGY/NUTRITION
- PHARM 5227 - CASE CONFERENCE SERIES 4

Total: 15 credits

Fall Term-Third Professional Year (P-3)

- PHARM 5312 - HEALTH SYSTEM PHARMACY 1: OPERATIONS AND DISPENSING
- PHARM 5314 - IMMUNOLOGY
- PHARM 5316 - PULMONOLOGY/RHEUMATOLOGY
- PHARM 5318 - ENDOCRINOLOGY
- PHARM 5320 - POPULATION HEALTH AND MANAGEMENT
- PHARM 5322 - PHARMACY LAW
- PHARM 5324 - CASE CONFERENCE SERIES 5
- PHARM - Professional Elective - 3 credits

Total: 16.5 credits

Spring Term-Third Professional Year (P-3)

- PHARM 5311 - SAFE MEDICATION USE AND PHARMAECONOMICS
Fourth Professional Year (P-4)

Spans 3 semesters (SUMMER, FALL, SPRING) with several options for credits earned per semester, for a total of 40 weeks

- PHARM 5401 - PHARMD ADVANCED PHARMACY PRACTICE EXPERIENCE 1
- PHARM 5402 - PHARMD ADVANCED PHARMACY PRACTICE EXPERIENCE 2
- PHARM 5403 - PHARMD ADVANCED PHARMACY PRACTICE EXPERIENCE 3
- PHARM 5404 - PHARMD ADVANCED PHARMACY PRACTICE EXPERIENCE 4
- PHARM 5405 - PHARMD ADVANCED PHARMACY PRACTICE EXPERIENCE 5
- PHARM 5406 - PHARMD ADVANCED PHARMACY PRACTICE EXPERIENCE 6
- PHARM 5407 - PHARMD ADVANCED PHARMACY PRACTICE EXPERIENCE 7
- PHARM 5408 - PHARMD ADVANCED PHARMACY PRACTICE EXPERIENCE 8

Total: 40 credits

Total Professional Credits: 134.5 credits

School of Pharmacy Faculty

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Degree</th>
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<tbody>
<tr>
<td>Dean</td>
<td>Patricia D. Kroboth</td>
<td>PhD</td>
<td>University of Pittsburgh</td>
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<tr>
<td>Senior Associate Dean</td>
<td>Randall B. Smith</td>
<td>PhD</td>
<td>University of Texas</td>
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<tr>
<td>Associate Dean for Community Partnerships, Associate Professor</td>
<td>Melissa A. McGivney</td>
<td>PharmD</td>
<td>University of Pittsburgh</td>
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<tr>
<td>Associate Dean for Education</td>
<td>Susan M. Meyer</td>
<td>PhD</td>
<td>Purdue University</td>
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<tr>
<td>Associate Dean for Graduate and Postdoctoral Programs, Professor</td>
<td>Samuel M. Poloyac</td>
<td>PhD</td>
<td>University of Kentucky</td>
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<tr>
<td>Associate Dean For Business Innovation, Associate Professor</td>
<td>Gordon J. Vanscory</td>
<td>MBA</td>
<td>University of Pittsburgh</td>
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<tr>
<td>Associate Dean for Research Innovation, Professor</td>
<td>Xiang-Qun Xie</td>
<td>MD, PhD</td>
<td>Second Military Medical University in Shanghai China; University of Connecticut</td>
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<tr>
<td>Associate Dean for PharmacoAnalytics, Professor</td>
<td>Richard Bertz</td>
<td>PhD</td>
<td>University of Pittsburgh</td>
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<tr>
<td>Assistant Dean of Students, Professor</td>
<td>Sharon E. Corey</td>
<td>PhD</td>
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<tr>
<td>Assistant Dean for Academic Affairs, Associate Professor</td>
<td>Denise L. Howrie</td>
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<tr>
<td>Chair of Pharmaceutical Sciences, Professor</td>
<td>Wen Xie</td>
<td>MD, PhD</td>
<td>Peking University; University of Alabama at Birmingham</td>
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<td>Chair of Pharmacy and Therapeutics, Associate Professor</td>
<td>Amy L. Seybert</td>
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<td>Ameer Ali</td>
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<td>Dennis P. Swanson</td>
<td>MS</td>
<td>University of Southern California</td>
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<tr>
<td>Professor</td>
<td>Ralph E. Tarter</td>
<td>PhD</td>
<td>University of Oklahoma</td>
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<tr>
<td>Assistant Prof</td>
<td>Lauren Trilli</td>
<td>PharmD</td>
<td>The Ohio State University</td>
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<tr>
<td>Professor</td>
<td>Michael M. Vanyukov</td>
<td>PhD</td>
<td>USSR Academy of Medical Sciences Institute of Medical Genetics</td>
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<tr>
<td>Professor</td>
<td>Raman Venkataramanan</td>
<td>PhD</td>
<td>University of British Columbia, Canada</td>
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<tr>
<td>Assistant Prof</td>
<td>Margaret Verrico</td>
<td>BS</td>
<td>University of Pittsburgh</td>
</tr>
<tr>
<td>Associate Prof</td>
<td>Junmei Wang</td>
<td>PhD</td>
<td>Peking University, China</td>
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<td>Assistant Prof</td>
<td>LiRong Wang</td>
<td>PhD</td>
<td>University of Science and Technology of China</td>
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<td>Assistant Prof</td>
<td>Da Yang</td>
<td>MD, PhD</td>
<td>Harbin Medical University, China</td>
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<td>Assistant Prof</td>
<td>Peng Yang</td>
<td>PhD</td>
<td>Tsinghua University, Peking Union Medical College, China</td>
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<tr>
<td>Professor</td>
<td>Michael A. Zemaitis</td>
<td>PhD</td>
<td>Pennsylvania State University</td>
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Graduate School of Public and International Affairs

The mission of the Graduate School of Public and International Affairs (GSPIA) is to prepare students to make substantive contributions to society through careers as managers, advisors, and policy analysts in government and nonprofit organizations in a multitude of geographic locations throughout the world. This mission is accomplished through dedication to quality teaching that builds skills and commitments to the core values, challenges, and rewards of public service. It is supported through basic and applied research on timely issues of public management; international, regional, and urban affairs; and policy making. The school and faculty are committed to making a difference in the world by drawing on diverse skills and knowledge to improve the performance of public and nonprofit organizations that contribute to free and just societies in the United States and abroad. To accomplish these ends, GSPIA teaches, conducts research, and performs public service in the following areas:

- The management and administration of public and nonprofit agencies
- The growth and sustainable development of urban metropolitan regions throughout the world
- The economic and social development of newly independent and developing states
- The emerging dynamics that are shaping today's international political economy
- Threats to and issues in international security

The mission of GSPIA stresses the importance of democratic responsibilities and personal integrity in the management of human affairs as well as the professional qualifications required for managing constructive change. Students and faculty alike are required to:

- Demonstrate the highest standards of ethical and professional conduct
- Use critical thinking and problem solving skills in addressing public policy issues
- Consider the international and intersectoral aspects of public affairs
- Develop partnerships with others both internal and external to the University of Pittsburgh

Contact Information

Office of Student Services  
Suite 3601 Posvar Hall  
412-648-7640  
Fax: 412-648-7641  
E-mail: gspia@pitt.edu  
www.gspia.pitt.edu

Admissions

http://www.gspia.pitt.edu/Prospective-Students

GSPIA admits persons who have demonstrated intellectual competence and high motivation in an academic and/or professional environment and who will enrich the quality of life in the school. Individuals from varied cultural, academic, and social backgrounds provide an exciting frame of reference for the stimulating exchanges so vital to a dynamic academic process. The following are required of all applicants: transcripts, application and fee, GRE score, TOEFL or IETS score (if international), letters of recommendation, essays, and resume.

Admission Prerequisites

It is desirable, but not mandatory, that PhD applicants have an earned master's degree in public and international affairs or a degree in one of the social sciences and work experience prior to undertaking doctoral study.

Admission Requirements
All applicants must have earned a bachelor's degree from a regionally accredited U.S. institution or a degree that is equivalent to a four-year U.S. bachelor's degree. Applicants are expected to have a B+ or better average (3.0 GPA) in their work to date. To be competitive for merit scholarships, applicants normally need at least a 3.5 GPA. The admissions committee also takes into consideration GPA within the major, GPA within the last two years, extenuating circumstances, length of time since graduation from college, rigor of the undergraduate program, and other factors.

Doctoral applicants are only eligible for admission to full-time status in the Fall Term.

**Application Requirements**

**Online Application**

Complete and submit the online application in its entirety. All application materials can be submitted electronically using the online system, with the exception of official academic transcripts.

**Application Fee**

The non-refundable $50 application fee may be paid by check or credit card. You will be prompted to pay the fee at the end of the online application process. The application fee is waived for Returned Peace Corps Volunteers, AmeriCorps Volunteers, Truman Scholars, Pickering Fellows, Coro Fellows, Rangel Fellows, McNair Fellows, Teach for America alumni, City Year alumni, Payne Fellows, Catholic Volunteer Network alumni, and veterans/active duty members of the US Armed Forces.

Early Application Discount: Prospective students who submit a complete online application for fall-term admission by December 31 of the previous year pay a reduced application fee of $25.

**Test of English as a Foreign Language (TOEFL) and the International English Language Testing System (IELTS)**

TOEFL/IELTS Scores (international students only). International applicants must submit either the TOEFL or the IELTS. Contact Educational Testing Services directly to request that an official score report be sent to GSPIA. The minimum TOEFL score required for admission is 80 on the Internet-based test, although 90 or above is strongly preferred. The minimum IELTS score required for admission is 7.0 (overall, and in each of the subsections). GSPIA's institutional code is 2574.

Exceptions: International students who completed a degree at a regionally accredited college or university in the United States are not required to submit a TOEFL/IELTS score. Students from certain English-speaking countries are also exempt (see this link for a list of exempt countries). All US citizens and permanent residents are exempt.

**GRE or GMAT Scores**

GRE or GMAT Scores (not required for MPPM and non-degree applicants).

All applicants to the MPA, MPIA, MID, and PhD programs must have taken the GRE or GMAT within five years of the date of their application. It is not necessary to take both exams; either test score may be submitted. Official score reports must be sent directly from the testing agency to GSPIA. (GRE test takers can order score reports online at www.gre.org. GMAT test takers can order reports at www.mba.com). Copies of your own score report are not acceptable. GSPIA's institutional code is for the GRE 2574.

Exceptions: Students applying to GSPIA's joint-degree program with the University of Pittsburgh School of Law may substitute an LSAT score in lieu of the GRE.

**Résumé**
All applicants should upload a current résumé/curriculum vitae, showing relevant awards, academic achievements, full- and part-time job experience, internships, and volunteer work.

**Personal Essay**

Introduce yourself to the admissions committee. Discuss your professional goals and why you feel a GSPIA degree can help you attain them. Describe your background, interests, and motivation for pursuing graduate work in public & international affairs. There is a 5,000 character limit (approximately two double-spaced, typed pages).

**Second Essay (PhD applicants only - not required for master's or non-degree candidates)**

Identify the broad topic and research questions you envision as the focus of your doctoral dissertation research, as well as the methodologies you intend to use. There is a 5,000 character limit (approximately two double-spaced, typed pages).

**Optional Essay**

If there are any special circumstances you would like the admissions committee to consider, highlight them in the optional essay. Use this essay to include any information that you feel is important, but that you were not able to include elsewhere on the application. There is no penalty for leaving this blank.

**Academic Transcripts**

When completing the online application, you will be asked to upload copies of official transcripts from all colleges and universities you have attended, whether or not you earned a degree. You should upload a scanned copy of an official transcript generated by your university's registrar's office. Self-reported transcripts, student grade reports, or copies of unofficial transcripts are not acceptable.

It is not necessary to submit hard copies of your transcripts at the time of application, as long as your scanned copies have uploaded successfully. If you are admitted, you will then be required to submit final, official transcripts directly from your university's registrar's office to GSPIA. The official copy must exactly match the scanned copy that you submitted at the time of application.

If you do not have access to technology that will allow you to submit a scanned copy of your transcript at the time of application, you may submit an official copy instead. The official copy must be sent by mail directly from your university's registrar's office to GSPIA (3601 Posvar Hall; Pittsburgh, PA 15260).

**Two Letters of Recommendation**

Letters should be written by professors who have taught you or supervisors who have overseen your work, either professionally or in a volunteer capacity. If you graduated from college less than three years ago, at least one, if not both, of your letters should be from professors. Letters written by friends, family members, work colleagues, or anyone who has not taught or supervised you are not acceptable.

All letters must be submitted online. When you complete the online application, you will be prompted to enter the names and email addresses of your recommenders. The system will automatically send them an email explaining how they can upload their letters.

**Admission Deadlines**

GSPIA does not consider applications on a rolling basis. International students are strongly encouraged to submit application materials at least one month prior to the stated deadlines.
Application Deadlines: Fall Term

US Citizens/Permanent Residents:

January 15 - PhD applicants
February 1 - MPA, MPIA, MID
June 1 - MPPM applicants
August 1 - Non-degree applicants

International Students:

January 15 - MPA, MPIA, MID, PhD, and MPPM applicants

Early Application Discount: Prospective students who submit a complete online application for fall-term admission by December 31 of the previous year pay a reduced application fee of $25.

Application Deadlines: Spring Term

US Citizens/Permanent Residents:

November 1 - MPA, MPIA, MID, and MPPM applicants
December 1 - Non-degree applicants

International Students:

August 1 - MPA, MPIA, MID, and MPPM applicants

Application Deadlines: Summer Term

US Citizens/Permanent Residents:

March 1 - MPPM applicants
April 1 - Non-degree applicants

International Students:

January 15 - MPPM applicants

School-Based Funding
GSPIA offers competitive, merit-based scholarships to its most outstanding master's degree applicants. All applicants for fall admission are automatically considered for merit funding, as long as they are planning to pursue full-time study and have submitted a complete application by the February 1 deadline. There is no separate application for GSPIA merit funding.

Typically, awards are renewed for the student's second year, as long as the student has earned at least 24 credits and maintained an overall GPA of 3.5 or better.

**Tuition**

**2018-2019 Academic Year Tuition***

Per Term Rate for Fall & Spring

- PA Resident - $11,145
- Out-of-State - $18,490

Per Credit and Summer Term

- PA Resident - $898
- Out-of-State - $1,512

**2018-2019 Academic Year Mandatory Fees***

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<tr>
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<th>Part-time</th>
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<td>Wellness Fee</td>
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*Subject to change based on University of Pittsburgh tuition rates and fees
Academic Standards

Students are in good academic standing when they earn acceptable grades for graduate work and make normal progress toward the degree. Specifically, full-time students must earn a minimum of 9 credits per term with a minimum cumulative GPA of 3.5 in all courses. Part-time students are held to the same standards. However, they are expected to do so while carrying less than 9 credits per term. Full- or part-time students admitted with provisional status must maintain a minimum cumulative GPA of 3.0 in all courses in their first 12 credits.

Students receiving school-based funding are held to higher standards. Master's students must earn, after two terms, 24 credits and a cumulative GPA of 3.5. Doctoral students must earn 24 credits and a cumulative GPA of 3.0.

Probation

Students are automatically placed on academic probation when they fail to maintain a minimum GPA of 3.00 and earn the appropriate number of credits for their status. Students are also placed on academic probation automatically if they receive two G or I grades in one term and/or earn a grade of U, C- or lower.

Dismissal

Students who fail to correct the deficiencies of their academic probation within a specified time period (normally one term) are subject to dismissal. Should a student be dismissed, students may appeal the decision to the associate dean.

For additional information on academic standards and procedures, students are referred to GSPIA's Handbook of Academic Policies and Procedures for Master's Degree Programs, GSPIA's Handbook of Academic Policies and Procedures for the Doctor of Philosophy, and the University's Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures.

Acceptance of Transfer Credits from Outside Institutions

Students who have completed graduate courses in degree-granting graduate programs at other accredited institutions prior to admission to GSPIA should submit official transcripts from those institutions at the time they apply so that the courses can be evaluated for transfer credits or waivers. If the source institution is located in the United States, the institution must be regionally accredited in order for the credits to be transferrable. Graduate-level courses taken while a student was enrolled in an undergraduate program are generally not eligible to be transferred into GSPIA. Under normal circumstances, only graduate-level courses taken after a student has earned a bachelor's degree may be evaluated as transfer credits. (See "Enrollment in Graduate Courses as an Undergraduate" above.) A maximum of 12 credits can be transferred for students enrolled in the MPA, MPIA, and MID degree programs. A maximum of 6 credits can be transferred for students enrolled in the MPPM program. Students admitted with provisional status cannot transfer credits until full graduate student status has been granted.

Official transcripts certifying graduate courses completed at another regionally accredited institution can be evaluated for acceptability as transfer credits, provided grades of B or better (GPA = 3.0) or its equivalent has been earned. Other documentation such as course syllabi and descriptions will be required to support the student's request. The documents must prove that the course(s) are substantially similar in content to existing GSPIA course(s) in order for the transfer to be approved. Transfer (advanced standing) credits are entered as block transfer credits (advanced standing) on the student's transcript. Grades and quality points are not recorded for credits accepted by transfer.

The completion of requirements for advanced degrees must be satisfied through registration at the Pittsburgh campus of the University. Graduate students already enrolled, may, when approved in advance by the director of student services, spend a term or more at another graduate institution, to obtain training or experience not available at the University, and transfer those credits toward the requirements for a GSPIA degree. In such instances, neither the University nor GSPIA is responsible for any financial assistance to the graduate student.

No credits will be granted toward a GSPIA degree for work completed in extension courses, correspondence courses, or those offered in the off-campus center of another institution unless those credits are approved for equivalent graduate degrees at that institution, and provided that the institution has a regionally accredited program.
Acceptance of Transfer Credits from Other Graduate Schools at the University of Pittsburgh

With the exception of students enrolled in formal joint-degree programs, students who earn/have earned credits while enrolled as a graduate student at another University of Pittsburgh school may petition for some of their credits to count toward the GSPIA degree. Typically, no more than six credits earned while enrolled in another graduate program at the University of Pittsburgh may be counted toward the GSPIA degree. In most cases, such credits will not be listed as transfer credits on the student's GSPIA transcript, and will count only as free electives. The final decision on course acceptability rests with the GSPIA director of student services and the University of Pittsburgh Registrar.

Statute of Limitations

The purpose of the statute of limitations is to ensure that a graduate degree from GSPIA represents mastery of current knowledge in the student's field of study.

Requirements for the professional master's degrees must be completed within a period of five consecutive calendar years from the students' initial registration for graduate study. Joint degrees that require coursework in excess of 50 credits may be granted a longer statute of limitations.

Under exceptional circumstances a candidate may apply for an extension of the statute of limitations. The request must be approved by the division director and submitted to the dean for final action. Each student who requests an extension of the statute of limitations must be prepared to demonstrate proper preparation for the completion of all current degree requirements.

Advising and Career Services

Academic Advising: Each student is assigned a faculty advisor based on, whenever possible, the compatibility of student and faculty academic interests. Faculty advisors assure that students, through proper course selection, can make productive use of the resources of the school and the University during their period of residence. In addition, faculty advisors are responsible for counseling their advisees about career opportunities in the student's area of study; for counseling advisees who have been placed on probation; and for approving the advisee's school-wide required and elective courses, proposed thesis or dissertation topics, and supervised internships. Advisors and students monitor academic progress and identify areas where corrective action on the part of students may be required. It is essential, therefore, that students consult periodically with their advisors. Unless students subsequently request a change, faculty members originally assigned will continue as advisors throughout the students' program of study. If, however, a change in faculty advisor is requested, students must obtain the signed approval of the new advisors. Based on a student-focused approach, we provide students with a Graduate Enrollment Counselor who serves as the first point of contact for class registration, financial aid application and preparation for graduation. Additionally, graduate enrollment counselors support students by providing information necessary to navigate the logistical challenges of graduate school and connect students to resources at the University of Pittsburgh.

Professional Development and Career Services: GSPIA places great emphasis on assisting students in determining the best and most appropriate positions available. In addition to faculty advisors, the school provides resources and guidance for students throughout their course of study as they devise strategies to identify professional opportunities. Among the many services offered through the Office of Career Services are individual career advising, internship and job search assistance, and a series of career-related workshops and special events. Extensive reference materials on jobs, fellowships, and internships are made available in a variety of ways, including Career Connections, GSPIA's online career management system for students and alumni. Workshops cover such topics as resume preparation, job search strategies, negotiation skills, networking, and using technology in securing employment. Special events include Foreign Service information sessions, mock interviews for the Presidential Management Fellowship Program, an internship fair, and networking events with alumni, foundations, and agency representatives on campus and in Washington, D.C. All students are required to participate in the Professional Development Program. In this course, students will gain the knowledge and resources necessary to begin to plan their career and internship searches. This graduation requirement covers job search techniques, resume and cover letter review, interviewing skills, internship and company searches and much more.
Major and Degree Options

GSPIA offers the following degrees:

Master of Public Administration (MPA), including majors in:

Energy & Environment
Governance & International Public Management
Policy Research & Analysis
Public & Nonprofit Management
Urban Affairs & Planning

This is a 48 credit program. The average length of time normally required to obtain this degree is 2 years.

Master of Public and International Affairs (MPIA), including majors in:

International Political Economy
Security and Intelligence Studies
Human Security

This is a 48 credit program. The average length of time normally required to obtain this degree is 2 years.

Master of International Development (MID), including majors in:

Human Security
Urban Affairs & Planning
Governance and International Public Management
Energy & Environment
Nongovernmental Organizations & Civil Society

This is a 48 credit program. The average length of time normally required to obtain this degree is 2 years.

Master of Public Policy and Management (MPPM) -

Traditional accelerated mid-career master program or
Online mid-career master program

This is a 30 credit program. The average length of time normally required to obtain this degree is 2 years.

Doctor of Philosophy (PhD)

Joint degrees

Minors

Students have the flexibility to customize their education as any major can be taken as a minor. Adding a minor will help differentiate your education, deepen your knowledge base and broaden professional marketability. Each minor consists of a 9-credit sequence of courses within your chosen subject area. This is taken in addition to general required courses and courses for your major area of study. Any course taken to fulfill a requirement for your degree or major cannot count towards your minor. A course may not be double-counted. An approved course must be substituted.
MID, MPIA, and MPA students may select a minor from among the nine listed below.

Civil Security & Disaster Management
Governance & International Public Management
Energy & Environment
International Political Economy
Nongovernmental Organizations & Civil Society
Policy Research & Analysis
Public & Nonprofit Management
Security & Intelligence Studies
Urban Affairs & Planning

**Joint Degrees**

GSPIA students may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements (including entrance exams like the GRE, GMAT, and LSAT, where applicable). If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed on year (or, in the case of current law students, two years) of full-time study.

Full-time students in the MPA, MPIA, or MID programs are eligible to participate in the following joint programs:

**Juris Doctor** with University of Pittsburgh School of Law: The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

**Master of Business Administration** with University of Pittsburgh Katz Graduate School of Business - MPIA and MID students only: Combining a GSPIA degree with an MBA opens many opportunities for a career in international finance, government financial regulation, or multinational corporations. Students with both degrees are highly marketable in the fields of international business and international economic policy.

**Master of Public Health** with University of Pittsburgh Graduate School of Public Health: Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

**Master of Social Work** with University of Pittsburgh School of Social Work: Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

**Master of Science in Information Science** with University of Pittsburgh School of Information Science: The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

**International Organizations MBA** with University of Geneva, Switzerland - MPIA and MID students only: In this unique program, students spend
one year in Pittsburgh followed by a year in Switzerland. There, they pursue an internship in Geneva's thriving diplomatic community while completing the requirements for the University of Geneva's IO-MBA, a unique management program which focuses on the needs of international organizations. After returning to Pittsburgh for one semester, students receive degrees from both universities. Both degrees are taught in English.

**Joint Degrees at Kobe University, Japan:** Through a special partnership, students may combine their GSPIA degrees with one of several degrees offered by the Graduate School of International Cooperative Studies at Kobe University: the Master of International Affairs, Master of Laws, Master of Economics, or Master of Political Science. The Kobe GSICS curriculum is in English.

**Early Admission Program** for Pitt undergraduate students to complete their bachelor's degree while working on a master's degree at GSPIA. Once a student has completed 24 credits in GSPIA, they may apply and obtain their bachelor's degree.

To be eligible undergraduate University of Pittsburgh students must be enrolled in The Dietrich School of Arts and Sciences or the College of General Studies, be in good academic standing with a minimum overall GPA of 3.5, have a minimum of 96 credits, have completed all Skills and General Education requirements and have no "I" or "G" grades.

Applicants must submit an online application through www.gspia.pitt.edu, in essay #3 make reference that you are applying for the Early Admission Program, submit a letter from your Academic/Faculty Advisor stating that you have completed all courses in your major(s). Dietrich SAS applicants must submit a letter from Ms. Susan Crain, Dietrich SAS office of the Dean, stating that they satisfy the above eligibility requirements and may enter our masters program. CGS applicants must submit a letter from Timothy Carr, 459A Cathedral of Learning, stating that they satisfy the above eligibility requirements and may enter our masters program.

**Special Academic Opportunities/Programs**

GSPIA offers a variety of academic programs to complement the degree programs offered, including area studies, exchange programs, and research and travel grants.

**Centers, Institutes and Initiatives**

The Matthew B. Ridgway Center for International Security Studies - educates the next generation of security analysts and produces scholarship and impartial analysis that informs the options available to policymakers who must confront diverse challenges to international and human security on a global scale.

The Ford Institute for Human Security - conducts research that focuses on a series of transnational threats to the human rights of civilian populations and makes independent research and policy papers available to both domestic and international policymakers.

The Center for Metropolitan Studies - connects the academic programs at GSPIA with state and local governments, federal agencies, regional governance institutions, and nonprofit organizations in the United States to address real time problems they are confronting.

Johnson Institute for Responsible Leadership - reaffirms GSPIA's commitment to creating ethical leaders and provides an institutional platform from which to launch an innovative program of teaching, research, and public service on issues of ethics and accountability in all areas of public life.

Center for Disaster Management - provides a school-wide focus to support research, education, and training projects that focus on extreme events. The goal of the Center is to develop a coherent approach for research and analysis on policy issues related to disaster risk reduction and management that cross inter-organizational, interdisciplinary, and inter-jurisdictional boundaries.

Shale Gas Governance Center - The mission of the Shale Gas Governance Center is to promote research, teaching and outreach on the governance issues posed in Pennsylvania, the United States and around the world by the emergence of the "shale gas revolution.

The Roscoe Robinson Jr. Memorial Lecture Series - promotes discussion and understanding of key issues related to diversity in public service. The series features at least two lectures per year in honor of the late Roscoe Robinson Jr, the first African American, U.S. Army four-star general.

The Philanthropy Forum - provides a university-based platform for national dialogue with leading thinkers and practitioners in the field of philanthropy and engages in significant research on the history and contemporary contributions of philanthropy to our local, national, and global communities.
International Political Economy Colloquium (IPEC) - provides a forum for IPE scholars to present their best new works in progress.

Pittsburgh International Trade and Development Seminar Series - is a joint undertaking sponsored by the University of Pittsburgh's Department of Economics, Graduate School of Public and International Affairs and Carnegie Mellon University of Pittsburgh's Heinz College.

The Governance Group is an interdisciplinary research center at the University of Pittsburgh, focusing on governance, institutional design and program evaluation. A joint initiative of the Graduate School of Public and International Affairs (GSPIA) and the Department of Political Science, the Group is comprised of over a dozen faculty members from five different departments with the University.

The Symposium on Political Violence is a joint undertaking sponsored by the Graduate School of Public and International Affairs (GSPIA), the Department of Political Science, and the Matthew B. Ridgway Center for International Security at the University of Pittsburgh. The Symposium provides a forum both for external scholars and for faculty and graduate students in GSPIA and the Department of Political Science at Pitt to present their research on political science.

Area Studies

The University of Pittsburgh is home to several internationally recognized area studies centers. Many of these centers have been designated National Resource Centers (NRCs) by the US Department of Education, certifying their status as leading centers of their kind in the United States. The NRCs sponsor numerous programs and offer Foreign Language and Area Studies (FLAS) Fellowships for which GSPIA students (U.S. citizens only) are eligible. The area studies centers and programs include:

- African Studies
- Asian Studies Center
- Center for Latin American Studies
- Center for Russian and East European Studies
- European Studies Center

In addition, UCIS is home to a European Union Center of Excellence, one of only ten so designated and partially funded by the European Union in the United States. The Study Abroad Office and the Nationality Rooms and Intercultural Exchange Programs round out the UCIS component programs.

UCIS offers graduate certificates that GSPIA students can pursue concurrently with their degrees, allowing them to focus their studies on a particular region or theme. UCIS's constituent units offer nine certificate programs. It is normally possible to complete the requirements for a GSPIA master's degree and a UCIS certificate in two years. For further information, see UCIS' section of this catalog.

GSPIA Programs Abroad

GSPIA has developed a number of international partnerships that offer students the possibility to study abroad for a regular academic term, during the summer, or-in a double degree program-for an entire year or more:

**International Organizations MBA in Geneva, Switzerland**

This program provides students with the opportunity to earn a master's degree from GSPIA as well as an IO-MBA from the University of Geneva (Switzerland) in 28 months. Students spend a year in Geneva and normally pursue an internship in Europe at an international organization. This is an ideal option for anyone interested in working at the United Nations or a similar multilateral body. Coursework is in English.

**Summer Studying the EU in Brussels, Belgium**

This program enables GSPIA students to earn credits toward their degree while studying EU policies and interacting with EU officials at the Free University of Brussels (ULB). Courses are taught in English.

**International Development and Asian Affairs in Kobe, Japan**

979
This program enables students to earn a Certificate in International Development and Asian Affairs from GSICS at Kobe University while completing their masters degree from GSPIA.

**Public Administration and/or International Studies in Seoul, Korea**

This program enables students to earn credits toward their GSPIA degree by taking courses in the Graduate School of Public Administration and/or the Graduate School of International Studies at Seoul National University. Coursework can be completed in English or Korean.

**Public Policy and International Affairs in Paris, France**

This program enables students to earn credits toward their GSPIA degree by taking courses at the Institut d'Etudes Politiques de Paris (in French), or at its English-language wing, the Paris School of International Affairs.

**Government or Political Science in Bogota, Colombia**

This program enables students to earn credits toward their GSPIA degree by taking courses at the Department of Political Science at the University of the Andes, one of Latin America's leading institutions. Coursework is in Spanish.

**Public Management in Nanjing, China**

This program enables students to earn credits toward their GSPIA degree by taking courses at Nanjing University's School of Public Management. Coursework is in Chinese.

**International Relations, Madrid, Spain**

This program allows students to earn credits toward their GSPIA degree by taking courses at the School of International Relations, IE University. Coursework is in English.

Budget permitting, each year the Office of the Dean and the school's academic programs make available small grants to students. Uses for these grants can include attending professional development conferences, presenting papers, and supporting internships and study abroad activities. These grants are awarded through a highly competitive selection process.

**Faculty**

Lisa S. Alfredson, Professor, PhD, London School of Economics

Ariel Armony, Professor, PhD, University of Pittsburgh

Luke Condra, Assistant Professor, PhD, Stanford University

Sabina E. Deitrick, Associate Professor, PhD, University of California, Berkeley

George W. Dougherty, Assistant Professor, PhD, University of Georgia

William N. Dunn, Professor, PhD, Claremont Graduate University

Gary Hollibaugh, Assistant Professor, PhD, University of Rochester

Muge Kokten Finkel, Assistant Professor, PhD, University of Virginia

Shanti Gamper-Rabindra, Associate Professor, Phd, Massachusetts Insitute of Technology
Marcela Gonzalez Rivas, Assistant Professor, PhD, University of North Carolina, Chapel Hill
Ryan Grauer, Assistant Professor, PhD, University of Pennsylvania
Daniel Jones, Assistant Professor, PhD, University of Pittsburgh
Kevin Kearns, Professor, PhD, University of Pittsburgh
John T.S. Keeler, Dean and Professor, PhD, Harvard University
Michael Kenney, Associate Professor, PhD, University of Florida
Michael Lewin, Lecturer, PhD, Johns Hopkins University
Sera Linardi, Assistant Professor, PhD, California Institute of Technology
Jerome B. McKinney, Professor, Phd, University of Missouri, Columbia
John Mendeloff, Professor, PhD, University of California, Berkeley
David Y. Miller, Professor, PhD, University of Pittsburgh
Jennifer B. Murtazashvili, Assistant Professor, PhD, University of Wisconsin, Madison
Ilia Murtazashvili, Assistant Professor, PhD, University of Wisconsin, Madison
Lisa Nelson, Associate Professor, PhD, University of Wisconsin, Madison
Paul J. Nelson, Associate Dean, PhD, University of Wisconsin
Erica Owen, Assistant Professor, PhD, University of Minnesota
Louis A. Picard, Professor, PhD, University of Wisconsin, Madison
Michael Poznansky, Assistant Professor, PhD, University of Virginia
Taylor Seybolt, Associate Professor, PhD, Massachusetts Institute of Technology
Nuno Themudo, Associate Professor, PhD, London School of Economics
Jeremy Weber, Assistant Professor, Phd, University of Wisconsin, Madison
Meredith Wilf, Assistant Professor, PhD, Princeton University
Phil Williams, Wesley W. Posvar Chair for International Security Studies, University of Southampton

**Part-time and Visiting Faculty**

Kathleen Buechel, Senior Lecturer, MA, Kennedy School of Government, Harvard University
Julie Santucci, Senior Lecturer, MA, University of Arizona

**Program and Course Offerings**

**Public and International Affairs, PhD**
Requirements

The PhD program requires the completion of 72 credits of course work and 6 credits for the dissertation for a total of 78 credits. The curriculum for doctoral students is outlined as follows:

Doctoral Core Courses: 12 credits

- PIA 3000 - INTERMEDIATE QUANTITATIVE METHODS
- PIA 3004 - SEMINAR IN RESEARCH DESIGN AND METHODS
- PIA 3050 - QUALITATIVE RESEARCH: DESIGN AND METHODS

- PIA 2025 - MICROECONOMICS 1
  or
- PIA 2028 - PUBLIC POLICY ANALYSIS

Field Seminars: 6 credits

Students must take two (2) of the following four field seminars.

- PIA ---- IA (International Affairs) FIELD SEMINAR
- PIA ---- ID (International Development) FIELD SEMINAR
- PIA ---- PA (Public Administration) FIELD SEMINAR
- PIA ---- PP (Public Policy) FIELD SEMINAR

Note: Field Seminars are only offered once every two (2) years, so students must register for the chosen seminars as soon as they are offered.

Electives: 24 credits

Students must take eight (8) additional graduate level courses.

PIA 3099 Dissertation: 6 credits

Students must be admitted to candidacy and must be writing their dissertation to be eligible to register for PIA 3099 Disseration. Six (6) credits of PIA 3099 Disseration are required to graduate.

- PIA 3099 - DISSERTATION PHD

Minimum Required Credits: 78 credits

Students must complete 72 credits of course work, excluding the 6 dissertation credits, with a minimum GPA of 3.0. Students must meet this requirement in order to qualify for final approval of their comprehensive examinations. Students are required to maintain full-time status while completing the 72 credits of coursework.

Doctoral Milestones

Plan of Study Meeting
After electing field and subfields early in the first term of study, students will meet with the faculty advisers representing their field and primary subfield. This meeting's aim is to structure a program that best serves the student's interests and ensures that the degree requirements are met in a timely and stipulated manner. At this meeting, the acceptance of course credits from previous graduate studies is also discussed.

**Annual Progress Evaluation: First and Second Years**

Held with the student's field and primary subfield advisers, the review serves the following purposes:

- To identify any necessary adjustments to the student's original plan of study
- In exceptional circumstances, to signal that a student's performance points to a reconsideration of his/her doctoral status.

The annual review should be scheduled near the end of each academic year. The student is responsible for scheduling this meeting, and should be fully aware that many professors may be unavailable after the end of the term. Failure to schedule this meeting in a timely manner may lead to the review being undertaken without student participation.

It is expected that the two faculty advisers will solicit comments from those faculty with whom the student has taken coursework during the year, especially in relation to courses in which the student did not perform adequately (i.e., received a G, I or lower than B grade).

**Annual Dissertation Progress Evaluation: Third and Later Years**

At the end of the third and later years, the student must undergo an annual evaluation of their progress toward the dissertation. As stated in the Regulations Governing Graduate Study at the University of Pittsburgh, "meetings of the doctoral candidate and his/her dissertation committee must occur at least annually from the time the student gains admission to doctoral candidacy. During these meetings, the committee should assess the student's progress toward the degree and discuss objectives for the following year and a timetable for completing degree requirements."

The student's dissertation committee, or academic advisers if a dissertation committee has not been approved by the end of the third year of studies, will undertake the evaluation. Unjustified failure to make sufficient progress toward the dissertation will be grounds for suspension of funding and, possibly, dismissal from the program.

**Comprehensive Examinations**

The comprehensive examination is designed to assess the student's mastery of two general fields of doctoral study. Unless an exception is granted by the Doctoral Program Director, Comprehensive Examinations are taken in May following a student's fourth semester, after the student completes all required courses and earns at least 72 credits (including advanced standing credits). In addition, all incomplete grades must be removed by meeting the requirements to complete the courses; even if the course is viewed by the student as not being relevant to his or her degree program.

Two Comprehensive Exams must be taken, corresponding to two of the four PhD fields (Public Policy, Public Administration, International Development, International Affairs). Students may change their chosen fields up until the registration for the Comprehensive Exams in the spring term of their second year. Each exam will be 60-hour take-home exam that require responses to three questions out of a pool of up to nine potential questions. Answers are limited to 2,000 words per question (not including references or footnotes). During the 60-hour period, students cannot communicate with others about the exam questions. Students' evaluation in comprehensive exams will be based on their mastery of the relevant literatures only.

Faculty will provide reading lists for each field that will be used to clarify expectations about the literatures that students are expected to master. The lists must be of reasonable length as determined by the field committee in consultation with the PhD program director. The PhD program director will provide incoming students with the most updated readings lists for all fields. No changes can be made to reading lists within 6 months of the comprehensive exam date.

**Establishing the Dissertation Committee**
During the third year of studies, and before admission to candidacy for the PhD degree, the major academic adviser (i.e., committee chair) proposes, for the approval of the director of the school's doctoral program and the dean, a committee of four or more persons, including at least one from another department in the University of Pittsburgh or from an appropriate graduate program at another academic institution, to serve as the dissertation committee. The majority of the committee, including the major adviser, must be full or adjunct members of the Graduate Faculty. This committee must review and approve the proposed research project before the student may be admitted to candidacy. A published Graduate Faculty Membership Roster is updated three times a year. Only a GSPIA faculty member is eligible to serve as the chair of the committee.

This dissertation committee has the responsibility to advise the student on his/her research and has the authority to require high-quality research and/or the rewriting of any portion or the entire dissertation. It conducts the final oral examination and determines whether the dissertation meets accepted standards.

The student must meet with his/her dissertation committee at least once a year (see Annual Dissertation Progress Evaluation above).

The membership of the dissertation committee may be changed whenever it is appropriate or necessary, subject to the approval of the Doctoral Program Director and the Dean.

When a dissertation committee member leaves the University, the member must be replaced unless the dissertation is almost complete or the member has an essential role on the committee. In the latter case, the dean's approval should be obtained. When the chair of a committee leaves and cannot be conveniently replaced, a co-chair must be appointed from within the department, and the restructured committee requires the approval of the dean and either the department chair or the director of the school's doctoral program. If the defense takes place within a few months of the chair's departure, the requirement of the co-chair is usually waived.

Retired faculty members may remain as members or chairs of committees if they are spending considerable time in Pittsburgh or the vicinity and are still professionally active. Retired faculty who meet these criteria may also be appointed as a member or as a co-chair (but not chair) of a newly formed committee. Retired faculty who leave the Pittsburgh area and/or do not remain professionally active should be replaced on committees and the revised committee approved by the dean and either the department chair or the school's director of doctoral programs.

The completed and signed Dissertation Committee Approval Form and/or the Change in Dissertation Committee Form should be submitted to the Office of Student Services for posting and filing.

All coordination between Dissertation Committee members is the responsibility of the student.

Dissertation Proposal

Immediately after passing the comprehensive examinations, and establishing the dissertation committee, the students should meet with the chair to discuss the development of a dissertation proposal, which outlines the goals and objectives, theoretical argument, policy implications, literature, research design, and timetable for the dissertation research.

The student will submit the Announcement of Dissertation Proposal Meeting Form, available from the Office of Student Services, to the Doctoral Program Director ten days prior to the proposal meeting. The announcement will be sent to the faculty and graduate student email lists. Proposal defense meetings are open to all faculty and students.

There must be a minimum of three members present for the meeting to be convened, and the absent member is required to submit a written evaluation of the proposal to the Committee Chair. Under no circumstances can the meeting be held without the Chair. If the Committee accepts the proposal, all Committee members will sign the Approval of Dissertation Proposal Form, available from the Office of Student Services. The completed and signed form is then submitted along with a copy of the approved proposal to the Ph.D. Program Director, who has final approval. According to University guidelines, only after the proposal has been accepted as final by the Doctoral Program Director does the student advance to candidacy. The signed and completed form is to be returned to the Office of Student Services for posting and filing.

Dissertation

The Dissertation Committee must meet a minimum of once a year; however, students are strongly encouraged to schedule more frequent committee meetings.
An appropriate dissertation should be a substantive piece of original and independent research grounded in an appropriate body of literature. The characteristics which a dissertation should demonstrate are:

- the establishment of a historical context for the presentation of an innovative and creative approach to the problem analysis and solution,
- a clear understanding of the problem area as revealed by analysis and synthesis of a broad literature base,
- a well-defined research design,
- clarity in composition and careful documentation,
- results of sufficient merit to be published in refereed journals or to form the basis of a book or monograph,
- sufficient detail so that other scholars can build on it in subsequent work, and
- the preparation of the author to assume a position within the profession.

Oral Defense of the Dissertation

At the oral defense, the student will be asked to explain and justify dissertation research and to assess its relation and contribution to the literature and policy in the field. The final oral examination in defense of the doctoral dissertation is conducted by the dissertation committee and need not be confined to materials in and related to the dissertation. Any member of the Graduate Faculty of the University may attend and participate in the examination. The date, place, and time of the examination should be published well in advance in the University Times. Other qualified individuals may be invited by the committee to participate in the examination. Only members of the dissertation committee may be present during the final deliberations and may vote on the passing of the candidate. A report of this examination, signed by all the members of the dissertation committee, must be sent to the Office of Student Services for posting and filing. If the decision of the committee is not unanimous, the case is referred to the dean for resolution. The chair of the dissertation committee should ensure that the dissertation is in final form, i.e., all required changes have been made, before requesting signatures of the members of the committee.

Electronic Thesis and Dissertation (ETD)

After approval of the dissertation, all candidates are required to publish the document electronically via d-scholarship. For access to more information on ETD and training, go to www.pitt.edu/~graduate/etd/training.html.

Department of Public Administration

Master of Public Administration (MPA)

Public administration is a field practiced at the intersection of the government, nonprofit, and private sectors. GSPIA's MPA program trains managers to balance the needs of each community with its resources, promoting neighborhood development, effective local government, ethical leadership, and responsible business practices. Students acquire an incredibly diverse and flexible set of professional skills appropriate for careers in nonprofit agencies, government offices, and private businesses worldwide.

The 48-credit MPA degree is designed to advance the core value of social equity fundamental to today's public management. GSPIA's programs in urban affairs and nonprofit management are consistently ranked among the very best in the country. Additionally, GSPIA's Center for Metropolitan Studies and the Johnson Institute for Responsible Leadership bridge the gap between theory and practice, allowing students to work directly with local government and nonprofit leaders. In 2012 US News ranked GSPIA #19 among all MPA programs for "City Management and Urban Policy." A major reason for this strength is GSPIA's relationship with Pitt's University Center for Social and Urban Research (UCSUR), where students and faculty engage in scholarly analysis of urban and regional issues. UCSUR promotes a multidisciplinary research agenda centered on economic, demographic, and social change in cities and regions.

Degree Requirements and Majors

MPA students may choose one of five majors: Energy and Environment, Public & Nonprofit Management, Urban Affairs & Planning, Governance & International Public Management or Policy Research & Analysis. Students may also pursue a minor in any of these fields, or in any of the following
fields offered by GSPIA's other degree programs.

Prior to graduation, students must also complete a 300-hour internship with an approval from GSPIA career services.

**Joint Degree Options**

MPA students are eligible to pursue one of several joint degrees at the University of Pittsburgh, including a joint MPA/law degree (JD), MPA/Master of Public Health (MPH), MPA/Master of Science in Information Science (MSIS), and MPA/Master of Social Work (MSW). They may also pursue a joint master's degree through the Graduate School of International Cooperative Studies at Kobe University in Japan. An accelerated, five-year bachelor's/master's degree program is available to select University of Pittsburgh undergraduates.

**Area Studies Certificate Options**

MPIA students are eligible to combine their master's degree with a graduate certificate from the University Center for International Studies, specializing in Africa, Asia, western Europe, eastern Europe, the European Union, Latin America, or Russia.

**Accreditation**

GSPIA's Master of Public Administration degree is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA). NASPAA accreditation recognizes that a master's program in public affairs has gone through a rigorous process of voluntary peer review conducted by the Commission on Peer Review and Accreditation (COPRA), and has met NASPAA's Standards for Professional Master's Degree Programs in Public Affairs, Policy, and Administration.

**Energy and Environment, JD/MPA**

**Joint Degree**

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of Public Administration and Juris Doctor**

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

**Note**
Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law's website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major courses.

Energy and Environment

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Science in Information Science

The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
• PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

• PIA 2096 - CAPSTON SEMINAR: (24 credits)

  OR

• PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

• PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
• PIA 2104 - FINANCIAL MANAGEMENT
• PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major courses.

Energy and Environment

• PIA 2231 - CONTEMPORARY US ENERGY POLICY
  OR

• PIA 2523 - GLOBAL ENERGY POLICY
  OR

• PIA 2115 - ENVIRONMENTAL ECONOMICS
  OR

• PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
  OR

• PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT

• PIA 2xxx - Approved E&E Major Course

Energy and Environment, MPA/MPH

Joint Degree
Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of Public Administration and Master of Public Health**

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

**Note**

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

**Requirements for the joint degree MPA/MPH**

**GSPIA Core Requirements: 12 credits**

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS I
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

OR

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- PIA 2099 - THESIS (24 credits prior = PIA 2003 + approval by graduate enrollment counselor)

**Degree Core Courses: 9 credits**

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS

**Major Courses: 12 credits**

(see Major-Specific requirements)
Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major courses.

Energy and Environment

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
  OR
- PIA 2523 - GLOBAL ENERGY POLICY
  OR
- PIA 2115 - ENVIRONMENTAL ECONOMICS
  OR
- PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
  OR
- PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT
  OR
- PIA 2xxx - Approved E&E Major Course

**Energy and Environment, MPA/MSW**

**Joint Degree**

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of Public Administration and Master of Social Work**
Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MSW

GSPIA Core Requirements: 18 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2021 - INTERNATIONAL AFFAIRS *
- PIA 2022 - QUANTITATIVE METHODS
- PIA 2024 - ECONOMICS FOR PUBLIC AFFAIRS *
- PIA 2025 - MICROECONOMICS 1 or
- PIA 2026 - MICROECONOMICS 2
- PIA 2028 - PUBLIC POLICY ANALYSIS
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM
- PIA 2098 - INTERNSHIP

Degree Core Courses: 9 credits

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION
- PIA 2096 - CAPSTON SEMINAR: or
- PIA 2099 - THESIS (pre-req. PIA 2028 + PIA 2003 + approval)

Major Courses: 9-12 credits

(see Major-Specific requirements)

Minimum Required GSPIA Credits: 36 credits

Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87
Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major courses.

Energy and Environment

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
- OR
- PIA 2523 - GLOBAL ENERGY POLICY
- OR
- PIA 2115 - ENVIRONMENTAL ECONOMICS
- OR
- PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
- OR
- PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT
- PIA 2xxx - Approved E&E Major Course

Governance & International Public Management, JD/MPA

Requirements for the joint degree MPA/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits
Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law's website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

**Governance & International Public Management (GIPM)**

- PIA 2xxx - Approved GIPM Major Course
- PIA 2xxx - Approved GIPM Major Course
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
  OR
- PIA 2124 - COMPARATIVE METROPOLITAN GOVERNANCE
- PIA 2552 - MANAGING ORGANIZATIONS IN DEVELOPMENT
  OR
- PIA 2199 - ADVANCED SEMINAR: INTERNATIONAL PUBLIC MANAGEMENT
  OR
- PIA 2011 - MANAGING INTERNATIONAL ORGANIZATIONS
  OR
- PIA 3393 - COMPARATIVE PUBLIC ADMINISTRATION

**Governance & International Public Management, MPA/MIS**

Requirements for the joint degree MPA/MIS

**GSPIA Core Requirements: 12 credits**

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

**Degree Core Courses: 9 credits**

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Governance & International Public Management (GIPM)

- PIA 2xxx - Approved GIPM Major Course
- PIA 2xxx - Approved GIPM Major Course
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
  OR
- PIA 2124 - COMPARATIVE METROPOLITAN GOVERNANCE
  OR
- PIA 2552 - MANAGING ORGANIZATIONS IN DEVELOPMENT
  OR
- PIA 2199 - ADVANCED SEMINAR: INTERNATIONAL PUBLIC MANAGEMENT
  OR
- PIA 2011 - MANAGING INTERNATIONAL ORGANIZATIONS
  OR
- PIA 3393 - COMPARATIVE PUBLIC ADMINISTRATION

Governance & International Public Management, MPA/MPH

Requirements for the joint degree MPA/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
• PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

• PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
  • PIA 2099 - THESIS (24 credits prior = PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

• PIA 2104 - FINANCIAL MANAGEMENT
• PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
• PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Governance & International Public Management (GIPM)

• PIA 2xxx - Approved GIPM Major Course
• PIA 2xxx - Approved GIPM Major Course
• PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
  OR
  • PIA 2124 - COMPARATIVE METROPOLITAN GOVERNANCE
  • PIA 2552 - MANAGING ORGANIZATIONS IN DEVELOPMENT
  OR
  • PIA 2199 - ADVANCED SEMINAR: INTERNATIONAL PUBLIC MANAGEMENT
  OR
  • PIA 2011 - MANAGING INTERNATIONAL ORGANIZATIONS
  OR
  • PIA 3393 - COMPARATIVE PUBLIC ADMINISTRATION

Policy Research and Analysis, JD/MPA
Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Juris Doctor

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
Major Courses: 12 credits
(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits
(see Law's website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Policy Research & Analysis

- PIA 2023 - INTERMEDIATE QUANTITATIVE METHODS
  (pre-requisites: PIA 2022)
- PIA 2xxx - Approved PRA Major Course
- PIA 2xxx - Approved PRA Major Course
- PIA 2xxx - Approved PRA Major Course

Policy Research and Analysis, MPA/MIS

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Science in Information Science

The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note
Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Policy Research & Analysis

- PIA 2023 - INTERMEDIATE QUANTITATIVE METHODS
  (pre-requisites: PIA 2022)
- PIA 2xxx - Approved PRA Major Course
Policy Research and Analysis, MPA/MPH

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Public Health

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)

OR

- PIA 2099 - THESIS (24 credits prior = PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits
Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Policy Research & Analysis

- PIA 2023 - INTERMEDIATE QUANTITATIVE METHODS
  (pre-requisites: PIA 2022)
- PIA 2xxx - Approved PRA Major Course
- PIA 2xxx - Approved PRA Major Course
- PIA 2xxx - Approved PRA Major Course

Policy Research and Analysis, MPA/MSW

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Social Work
Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

**Note**

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

**Requirements for the joint degree MPA/MSW**

**GSPIA Core Requirements: 18 credits**

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2021 - INTERNATIONAL AFFAIRS *
- PIA 2022 - QUANTITATIVE METHODS
- PIA 2024 - ECONOMICS FOR PUBLIC AFFAIRS *
- PIA 2025 - MICROECONOMICS 1 or
- PIA 2026 - MICROECONOMICS 2
- PIA 2028 - PUBLIC POLICY ANALYSIS
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM
- PIA 2098 - INTERNSHIP

**Degree Core Courses: 9 credits**

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION
- PIA 2096 - CAPSTON SEMINAR: or
- PIA 2099 - THESIS (pre-req. PIA 2028 + PIA 2003 + approval)

**Major Courses: 9-12 credits**

(see Major-Specific requirements)

**Minimum Required GSPIA Credits: 36 credits**

**Master of Social Work requirements: 51 credits**

(see Social Work website for requirements)

**Total Number of Credits for Joint Degree: 87**

**Major Specific Requirements:**
Public and Nonprofit Management, JD/MPA

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Juris Doctor

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS

Major Courses: 12 credits
(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits
(see Law's website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Public & Nonprofit Management
- PIA 2103 - MANAGING PEOPLE IN THE PUBLIC AND NON-PROFIT SECTOR
- PIA 2185 - STRATEGIC MANAGEMENT
  (pre-requisites: PIA 2020 or 2170)
- PIA 2xxx - Approved PNM Major Course
- PIA 2xxx - Approved PNM Major Course

Public and Nonprofit Management, MPA/MIS

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.
Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Science in Information Science

The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)

OR

- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)
Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Public & Nonprofit Management

- PIA 2103 - MANAGING PEOPLE IN THE PUBLIC AND NON-PROFIT SECTOR
- PIA 2185 - STRATEGIC MANAGEMENT
  (pre-requisites: PIA 2020 or 2170)
- PIA 2xxx - Approved PNM Major Course
- PIA 2xxx - Approved PNM Major Course

Public and Nonprofit Management, MPA/MPH

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master’s degrees in just three years, or a master’s degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA’s GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Public Health

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)

OR

- PIA 2099 - THESIS (24 credits prior = PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
- PIA 2120 - ADMINISTRATION OF PUBLIC AFFAIRS

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Public & Nonprofit Management

- PIA 2103 - MANAGING PEOPLE IN THE PUBLIC AND NON-PROFIT SECTOR
- PIA 2185 - STRATEGIC MANAGEMENT

(pre-requisites: PIA 2020 or 2170)

- PIA 2xxx - Approved PNM Major Course
- PIA 2xxx - Approved PNM Major Course

Public and Nonprofit Management, MPA/MSW

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.
To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Social Work

Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MSW

GSPIA Core Requirements: 18 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2021 - INTERNATIONAL AFFAIRS *
- PIA 2022 - QUANTITATIVE METHODS
- PIA 2024 - ECONOMICS FOR PUBLIC AFFAIRS *
- PIA 2025 - MICROECONOMICS 1 or
- PIA 2026 - MICROECONOMICS 2
- PIA 2028 - PUBLIC POLICY ANALYSIS
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM
- PIA 2098 - INTERNSHIP

Degree Core Courses: 9 credits

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION
- PIA 2096 - CAPSTON SEMINAR: or
- PIA 2099 - THESIS (pre-req. PIA 2028 + PIA 2003 + approval)

Major Courses: 9-12 credits
Minimum Required GSPIA Credits: 36 credits

Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87

Major Specific Requirements:

Public & Nonprofit Management

- PIA 2103 - MANAGING PEOPLE IN THE PUBLIC AND NON-PROFIT SECTOR
- PIA 2185 - STRATEGIC MANAGEMENT
  (pre-requisites: PIA 2020 or 2170)
- PIA 2xxx - Approved PNM Major Course
- PIA 2xxx - Approved PNM Major Course

Urban Affairs & Planning, JD/MPA

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Juris Doctor

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the
degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
  • PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law's website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Urban Affairs & Planning (UAP)

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course
Urban Affairs & Planning, MPA/MIS

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Science in Information Science

The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits) OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2104 - FINANCIAL MANAGEMENT
Major Courses: 12 credits
(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits
(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Urban Affairs & Planning (UAP)

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course

Urban Affairs & Planning, MPA/MPH

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Public Health

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease
recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior = PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)
- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Urban Affairs & Planning (UAP)
Urban Affairs & Planning, MPA/MSW

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public Administration and Master of Social Work

Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPA/MSW

GSPIA Core Requirements: 18 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2021 - INTERNATIONAL AFFAIRS *
- PIA 2022 - QUANTITATIVE METHODS
- PIA 2024 - ECONOMICS FOR PUBLIC AFFAIRS *
- PIA 2025 - MICROECONOMICS 1 or
- PIA 2026 - MICROECONOMICS 2
- PIA 2028 - PUBLIC POLICY ANALYSIS
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM
Degree Core Courses: 9 credits

- PIA 2098 - INTERNSHIP
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION
- PIA 2096 - CAPSTON SEMINAR: or
- PIA 2099 - THESIS (pre-req. PIA 2028 + PIA 2003 + approval)

Major Courses: 9-12 credits

(see Major-Specific requirements)

Minimum Required GSPIA Credits: 36 credits

Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87

Major Specific Requirements:

Urban Affairs & Planning (UAP)

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course

Energy and Environment, MPA

Energy & Environment (E&E)

Energy & Environment explores the politics and policies of the worldwide energy industry, examining ways to meet global energy needs in a sustainable, environmentally conscious way. Pittsburgh is a global epicenter of one of the biggest energy revolutions of the 21st century - the shale gas boom. New technologies like “fracking” are making billions of dollars of natural gas accessible to world markets for the first time, generating thousands of new jobs from Europe to North America. Western Pennsylvania sits atop one of the largest and most productive shale deposits anywhere on the planet, raising major questions about how to extract the gas responsibly, how to protect communities from environmental harm, and how to tax and regulate the rapid growth. GSPIA Students study the economics of the global energy industry, environmental sustainability, and regulatory policy in one of the world's best living laboratories. Graduates are prepared for jobs at environmental protection agencies, energy corporations, and a host of local, state, and national government offices that make energy policy.

The major curriculum, comprising 12 credits, follows:

GSPIA core Requirements (See Master's Degree Requirements): 12 credits
Degree Core Courses: 9 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)

Major Courses: 12 credits

- PIA 2xxx - Approved E&E Major Course

Three of the following five courses:

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
- PIA 2523 - GLOBAL ENERGY POLICY
- PIA 2115 - ENVIRONMENTAL ECONOMICS
- PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
- PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT

Electives: 15 credits

Minimum Required Credits: 48 credits

Governance & International Public Management, GIPM/MPA

Governance and International Public Management provides a comparative perspective on international development, focusing on the ways in which public and nonprofit organizations must adapt to meet the different cultural, political, and economic circumstances of the communities they serve.

It explores how public agencies around the globe, faced with similar problems like poverty, illiteracy, and inequality, have addressed those issues differently in different countries. Students confront the challenges of implementing complex policies in a global, multicultural context. This major focuses on developing the management and analytical skills necessary to take leadership roles in the multilateral sector, governments abroad, or any organization that delivers services internationally. Graduates are well-prepared to pursue careers at the United Nations, the U.S. Agency for International Development, and similar organizations.

Core: Governance & International Public Management(GIIPM)

The major curriculum, comprising 12 credits, follows:

GSPIA core Requirements (See Master's Degree Requirements): 12 credits

Degree Core Courses: 9 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-requisite: PIA 2022)

Major Courses: 12 credits

- PIA 2xxx - Approved GIPM Major Course
- PIA 2xxx - Approved GIPM Major Course
Two of the following four courses:

- PIA 2528 Governance & Local Government and Civil Society
- PIA 2519 Comparative Governance
- PIA 2552 Managing Organizations in Development
- PIA 2180 Comparative Public Administration

Electives: 15 credits

Minimum Required Credits: 48 credits

**Policy Research and Analysis, MPA**

**Policy Research and Analysis (PRA)**

Today's policymakers require analytical skills from a variety of disciplines: quantitative, economic, political, and organizational. Students in the policy research & analysis major enjoy access to a rich array of resources to help them prepare for careers in both the public and private sectors. Recent graduates of our program have gone on to work in such careers as budget examiners for the state of New York, analysts for the Government Accountability Office and the U.S. Mint and consultants for the leading firm Booz Allen Hamilton.

Motivated and inquisitive people looking to acquire the technical skills and knowledge to contribute to research and policymaking decisions will appreciate our curriculum. It is infused with a rich variety of interdisciplinary viewpoints to give students a well-informed view of policy analysis that is both national and international in scope.

The major curriculum, comprising 12 credits, follows:

**GSPIA Core Requirements (See Master's Degree Requirements): 12 credits**

**Degree Core Courses: 9 credits**

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-req: PIA 2022)

**Major Courses: 12 credits**

- PIA 2023 - INTERMEDIATE QUANTITATIVE METHODS (pre-requisite PIA 2022)
- PIA XXXX Approved PRA major course
- PIA XXXX Approved PRA major course
- PIA XXXX Approved PRA major course

**Electives: 15 credits**

Minimum Required Credits: 48 credits

**Public and Nonprofit Management, MPA**
Public and Nonprofit Management (PNM)

Public service is a discipline practiced at many levels: local, national and international often with ripple effects across each. Through grassroots contributions and global applications, GSPIA students pursuing a public & nonprofit management major acquire a deep understanding of the many contexts in which public and nonprofit organizations operate. Many look forward to the opportunity to leverage change in a mixed economy.

Our curriculum stresses responsible leadership and our students develop the skills to diagnose leadership challenges and opportunities from a variety of ethical and moral frameworks. Our interdisciplinary approach draws from a variety of fields such as philosophy, law, organizational design and political science. Our approach gives students the skills they need to meet the challenges of a world in which services increasingly span boundaries among business, government and nonprofit organizations.

The major curriculum, comprising 12 credits, follows:

GSPIA Core Requirements (See Master's Degree Requirements): 12 credits

Degree Core Courses: 9 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION
  (pre-req: PIA 2022)

Major Courses: 12 credits

- PIA 2103 - MANAGING PEOPLE IN THE PUBLIC AND NON-PROFIT SECTOR
- PIA 2185 - STRATEGIC MANAGEMENT (pre-req. PIA 2020 or PIA 2170)
- PIA XXXX Approved PNM major course
- PIA XXXX Approved PNM major course

Electives: 15 credits

Minimum Required Credits: 48 credits

Urban Affairs & Planning, MPA

Urban Affairs & Planning (UAP)

The major in Urban Affairs and Planning takes a city-focused perspective on international development. More than half of the world's people now live in urban areas, raising important questions about how governments should meet the public's needs for transportation, health and sanitation, education, and other essential services.

As the developing world urbanizes, booming cities like Shanghai, Mumbai, Buenos Aires, and Johannesburg face critical challenges, including poverty, homelessness, and pollution. The major prepares students to confront those problems on an international scale, while developing valuable skills in Geographic Information Systems (GIS), regional economic planning, and sustainable development management. Students take advantage of GSPIA's highly regarded Center for Metropolitan Studies, participating in cutting-edge research alongside faculty experts.

The major curriculum, comprising 12 credits, follows:

GSPIA Core Requirements (See Master's Degree Requirements): 12 credits
Degree Core Courses: 9 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2104 - FINANCIAL MANAGEMENT
- PIA 2117 - PROGRAM EVALUATION (pre-req: PIA 2022)

Major Courses: 12 credits

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course

Electives: 15 credits

Minimum Required Credits: 48 credits

Energy and Environment Minor

The required courses for the Energy & Environment Minor are:

PIA 2523     Global Energy Policy (3cr)

or

PIA 2231     Current Controversies - U.S. Energy Policy (3cr)

PIA 2502     Global Environmental Policy (3cr)

or

PIA 2115     Environmental Economics (3cr)

PIA 2XXX     Approved E&E course (3cr)

With approval, appropriate courses may be substituted for those listed above. No course may be double-counted. Any course taken to fulfill a requirement for your degree or major cannot also count toward your minor. In such cases, an approved course must be substituted. Please consult with your graduate enrollment counselor.

Policy Research and Analysis Minor

The requirements for the Policy Research and Analysis minor are:

PIA 2023     Intermediate Quantitative Methods (3cr)

PIA 2025     Microeconomics (3cr)

PIA 2117     Program Evaluation (3cr)
With approval, appropriate courses may be substituted for those listed above. No course may be double-counted. Any course taken to fulfill a requirement for your degree or major cannot also count toward your minor. In such cases, an approved course must be substituted. Please consult with your graduate enrollment counselor.

**Public and Nonprofit Management Minor**

The requirements for the Public and Nonprofit Management minor are:

- PIA 2103 Managing People in the Public/Nonprofit Sector (3cr)
- PIA 2117 Program Evaluation (3cr)
- PIA 2185 Strategic Management (3cr)

With approval, appropriate courses may be substituted for those listed above. No course may be double-counted. Any course taken to fulfill a requirement for your degree or major cannot also count toward your minor. In such cases, an approved course must be substituted. Please consult with your graduate enrollment counselor.

**Urban Affairs & Planning Minor**

The requirements for the Urban Affairs and Planning minor are:

- PIA 2025 Microeconomics (3cr)
- PIA 2125 City & Regional Theory & Practice (3cr)
- PIA 2715 GIS for Public Policy (3cr)

With approval, appropriate courses may be substituted for those listed above. No course may be double-counted. Any course taken to fulfill a requirement for your degree or major cannot also count toward your minor. In such cases, an approved course must be substituted. Please consult with your graduate enrollment counselor.

**Department of Public and International Affairs**

**Master of Public and International Affairs (MPIA)**

From the halls of the United Nations to the streets of war-torn conflict zones, the modern international system is in a state of rapid flux that demands versatile, well-educated professionals. The MPIA degree is a multidisciplinary program designed to prepare students for careers of influence in the international arena - as government policymakers, diplomats, intelligence officials, global business leaders, nonprofit managers, and policy researchers. The program emphasizes practical skills and knowledge necessary to participate in the world policy process and shape its future. The MPIA curriculum includes traditional courses on world history, economics, and international relations theory, along with practical courses on intelligence collection and analysis, diplomacy, and international finance. It also includes one of the country's only graduate specializations in Human Security - a unique field that focuses on the security of civilian populations and human rights.

**Degree Requirements and Majors**

Students must complete at least 48 credits in public and international affairs and may choose one of three majors: International Political Economy, Human Security, or Security & Intelligence Studies. Students may also pursue a minor in any of these fields, or in any of the following fields offered...
by GSPIA's other degree programs. Prior to graduation, students must also complete a 300-hour internship with an approval from GSPIA career services.

**Joint Degree Options**

MPIA students are eligible to pursue one of several joint degrees at the University of Pittsburgh, including a joint MPIA/law degree (JD), MPIA/Master of Business Administration (MBA), MPIA/Master of Public Health (MPH), MPIA/Master of Science in Information Science (MSIS), and MPIA/Master of Social Work (MSW). They may also pursue a joint master's degree through the University of Geneva in Switzerland or the Graduate School of International and Cooperative Studies at Kobe University in Japan. An accelerated, five-year bachelor's/master's degree program is available to select University of Pittsburgh undergraduates.

**Area Studies Certificate Options**

MPIA students are eligible to combine their master's degree with a graduate certificate from the University Center for International Studies, specializing in Africa, Asia, western Europe, eastern Europe, the European Union, Latin America, or Russia.

**Human Security, JD/MPIA**

**Joint Degree**

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of Public & International Affairs and Juris Doctor**

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

**Note**

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

**Requirements for the joint degree MPIA/JD**

GSPIA Core Requirements: 12 credits
• PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional lecture)

• PIA 2025 - MICROECONOMICS 1

OR

• PIA 2027 - MACROECONOMICS

• PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req. PIA 2022)

• PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)

• PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

• PIA 2096 - CAPSTON SEMINAR: (24 credits)

OR

• PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

• PIA 2021 - INTERNATIONAL AFFAIRS

• PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

• PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or

• PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or

• PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Human Security

• PIA 2xxx - Approved HS Major Course

• PIA 2xxx - Approved HS Major Course
Human Security, MBA/MPIA

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public & International Affairs and Master of Business Administration

For MPIA and MID students only: Combining a GSPIA degree with an MBA opens many opportunities for a career in international finance, government financial regulation, or multinational corporations. Students with both degrees are highly marketable in the fields of international business and international economic policy.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MBA

Student is required to take one of the following depending on major:

If SIS major:  PIA 2303 Security & Intelligence Studies

If IPE major:  PIA 2301 International Political Economy

If HS major:   PIA 2307 Human Security

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
PIA 2025 - MICROECONOMICS 1

OR

PIA 2027 - MACROECONOMICS

PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)

PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)

PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

PIA 2096 - CAPSTON SEMINAR: (24 credits)

OR

PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2363 - INTERNATIONAL HISTORY
- PIA 2021 - INTERNATIONAL AFFAIRS

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Business Administration requirements: 39 or 40.5 credits

(see Business Administration website for requirements)

Total Number of Credits for Joint Degree: 75.5 or 76

Major Specific Requirements:

Human Security

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
Human Security, MPIA/MIS

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public and International Affairs and Master of Science in Information Science

The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MIS

GSPIA Core Requirements: 12 credits

- **PIA 2022 - QUANTITATIVE METHODS** (students may waive PIA 2022 if they pass the waive exam. If waived, the class must be replaced by an additional elective)
- **PIA 2025 - MICROECONOMICS 1**
- **PIA 2027 - MACROECONOMICS**
- **PIA 2028 - PUBLIC POLICY ANALYSIS** (pre-req: PIA 2022)
- **PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM** (may be waived, see career counselor in first term)
- **PIA 2098 - INTERNSHIP** (may be waived, see career counselor in first term)
- **PIA 2096 - CAPSTON SEMINAR** (24 credits)
- **PIA 2099 - THESIS** (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)
Degree Core Courses

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Human Security

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course

Human Security, MPIA/MPH

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students
spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of Public and International Affairs and Master of Public Health**

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

**Note**

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

**Requirements for the joint degree MPIA/MPH**

**GSPIA Core Requirements: 12 credits**

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. if waived, the class must be replaced by an additional elective)

- PIA 2025 - MICROECONOMICS 1

  OR

- PIA 2027 - MACROECONOMICS

- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)

- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)

- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)

  OR

- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

**Degree Core Courses: 9 credits**

- PIA 2021 - INTERNATIONAL AFFAIRS

- PIA 2363 - INTERNATIONAL HISTORY

**One of the following based on major:**

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY

- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES

- PIA 2307 - HUMAN SECURITY
Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Human Security

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course

Human Security, MPIA/MSW

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public and International Affairs and Master of Science in Information Science
The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MSW

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced with an additional elective)
- PIA 2025 - MICROECONOMICS 1
  OR
- PIA 2027 - MACROECONOMICS
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTONE SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits
Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87

Major Specific Requirements:

Human Security

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course

Security and Intelligence Studies, JD/MPIA

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public & International Affairs and Juris Doctor

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/JD
GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional lecture)

- PIA 2025 - MICROECONOMICS 1

- PIA 2027 - MACROECONOMICS

- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req. PIA 2022)

- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)

- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)

- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2021 - INTERNATIONAL AFFAIRS

- PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Security & Intelligence Studies
Security and Intelligence Studies, MBA/MPIA

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public & International Affairs and Master of Business Administration

For MPIA and MID students only: Combining a GSPIA degree with an MBA opens many opportunities for a career in international finance, government financial regulation, or multinational corporations. Students with both degrees are highly marketable in the fields of international business and international economic policy.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MBA

Student is required to take one of the following depending on major:

- If SIS major: PIA 2303 Security & Intelligence Studies
- If IPE major: PIA 2301 International Political Economy
- If HS major: PIA 2307 Human Security

GSPIA Core Requirements: 12 credits
- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)

- PIA 2025 - MICROECONOMICS 1
- OR
- PIA 2027 - MACROECONOMICS

- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2363 - INTERNATIONAL HISTORY
- PIA 2021 - INTERNATIONAL AFFAIRS

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Business Administration requirements: 39 or 40.5 credits

(see Business Administration website for requirements)

Total Number of Credits for Joint Degree: 75.5 or 76

Major Specific Requirements:

Security & Intelligence Studies

- PIA 2xxx - Approved SIS Major Course
- PIA 2xxx - Approved SIS Major Course
Security and Intelligence Studies, MPIA/MIS

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public & International Affairs and Master of Science in Information Science

The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waive exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- OR
- PIA 2027 - MACROECONOMICS
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)
• PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
• PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses

• PIA 2021 - INTERNATIONAL AFFAIRS
• PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

• PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
• PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
• PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Security & Intelligence Studies

• PIA 2xxx - Approved SIS Major Course
• PIA 2xxx - Approved SIS Major Course
• PIA 2xxx - Approved SIS Major Course
• PIA 2xxx - Approved SIS Major Course

Security and Intelligence Studies, MPIA/MPH

Joint Degree
Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA’s GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of Public & International Affairs and Master of Public Health**

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

**Note**

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

**Requirements for the joint degree MPIA/MPH**

**GSPIA Core Requirements: 12 credits**

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- OR
- PIA 2027 - MACROECONOMICS
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- OR
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

**Degree Core Courses: 9 credits**

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2363 - INTERNATIONAL HISTORY
One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Security & Intelligence Studies

- PIA 2xxx - Approved SIS Major Course
- PIA 2xxx - Approved SIS Major Course
- PIA 2xxx - Approved SIS Major Course
- PIA 2xxx - Approved SIS Major Course

Security and Intelligence Studies, MPIA/MSW

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.
Master of Public & International Affairs and Master of Social Work

Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MSW

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced with an additional elective)
- PIA 2025 - MICROECONOMICS 1
- OR
- PIA 2027 - MACROECONOMICS
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)
Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87

Major Specific Requirements:

Security & Intelligence Studies

- PIA 2xxx - Approved SIS Major Course
- PIA 2xxx - Approved SIS Major Course
- PIA 2xxx - Approved SIS Major Course
- PIA 2xxx - Approved SIS Major Course

Human Security, MPIA

Human Security

Because the globalization process has made the world seem exponentially smaller, threats from tsunamis, earthquakes, disease and starvation are arriving faster and in more dramatic fashion than ever before. One of the most innovative, forward-thinking disciplines in international affairs today, the human security major covers a wide swath of issues critical to the safety of people worldwide.

GSPIA's program, one of the first of its kind in the United States, emphasizes the development of peacekeeping and peace-building skills. Students study threats to individuals from nongovernmental, nonmilitary sources. Examples of threats include civil wars, international migration and crime, global climate changes and natural disasters. We teach students to focus on the human condition as a planet, resulting in a new generation of leaders able to guide our global community through some of the most perilous times is has ever experienced.

The major curriculum, comprising 12 credits, follows:

GSPIA Core Requirements (See Master's Degree Requirements): 12 credits

Degree Core Courses: 9 credits

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2307 - HUMAN SECURITY
- PIA 2363 - INTERNATIONAL HISTORY

HS Major Courses: 12 credits

- PIA XXXX Approved HS major course
Electives: 15 credits

Minimum Required Credits: 48 credits

**International Political Economy, MPIA**

**International Political Economy**

From the Euro to the yen, today's global economy operates in a climate of change. The international global political economy (IPE) major teaches students to understand globalization and the role the state plays, as well as market strategies for corporations and their corporate identities. Courses target competencies in finance, economics, international trade and development. Specific topics range from the work of nongovernmental organizations (NGOs) to political climates in post-Communist states and the role of women in developing countries.

GSPIA IPE students are idealistic, curious about the world and eager to put their vision into practice. Recent IPE graduates include a treasury expert with the Republic of Turkey, a project manager specialist for the U.S. Agency for International Development's Mission in Moscow, a presidential management fellow with the U.S. Department of Commerce, and a United Nations Fulbright Fellow with the Department of Social and Economic Affairs.

The major curriculum, comprising 12 credits, follows:

GSPIA Core Requirements (See Master's Degree Requirements): 12 credits

Degree Core Courses: 9 credits

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY
- PIA 2363 - INTERNATIONAL HISTORY

Major Courses: 12 credits

- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course

Electives: 15 credits

Minimum Required Credits: 48 credits

**Security and Intelligence Studies, MPIA**

Security and Intelligence Studies
The post-9/11 world has brought remarkable change to national and international security. Issues of strategy, weapons systems, national defense and the role of government are being redefined every day. GSPIA's major in security & intelligence studies (SIS) approaches issues within an international context and covers a variety of topics including transnational organized crime, terrorism, weapons of mass destruction and competition for natural resources.

SIS students are interested in the use of technology, investigation and discovery and often have a desire to travel internationally. Our program prepares students for careers in the security or intelligence fields with various think tanks or intelligence agencies, such as the FBI or CIA.

The major curriculum, comprising 12 credits, follows:

GSPIA Core Requirements (See Master's Degree Requirements): 12 credits

Degree Core Courses: 9 credits

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES
- PIA 2363 - INTERNATIONAL HISTORY

Major Courses: 12 credits

- PIA XXXX Approved SIS major course
- PIA XXXX Approved SIS major course
- PIA XXXX Approved SIS major course
- PIA XXXX Approved SIS major course

Electives: 15 credits

Minimum Required Credits: 48 credits

Civil Security and Disaster Management Minor

The required courses for the Civil Security & Disaster Management Minor are:

PIA 2101 Managing Emergencies & Disasters (3cr.)
PIA 2129 Law & Civil Society (3cr.)
PIA 2096 Early Warning & Contemporary Threats (3cr.)

or

PIA 2742 NGO's & Humanitarian Disasters (3cr)

With approval, appropriate courses may be substituted for those listed above. No course may be double-counted. Any course taken to fulfill a requirement for your degree or major cannot also count toward your minor. In such cases, an approved course must be substituted. Please consult with your graduate enrollment counselor.

Security and Intelligence Studies Minor
The requirements for the Security and Intelligence minor are:

PIA 2303      Security & Intelligence (3cr)
PIA 2XXX      Approved SIS course (3cr)
PIA 2XXX      Approved SIS course (3cr)

With approval, appropriate courses may be substituted for those listed above. No course may be double-counted. Any course taken to fulfill a requirement for your degree or major cannot also count toward your minor. In such cases, an approved course must be substituted. Please consult with your graduate enrollment counselor.

Department of International Development

Master of International Development (MID)

MID students promote respect for human life and human rights, often working behind the scenes to bring real improvements to the human condition through hands-on careers in public service. They work face-to-face with underprivileged and vulnerable populations, in the front offices of aid agencies, and in international organizations dedicated to protecting those who need help most.

The 48-credit MID degree is designed to prepare students to make a difference locally, nationally, and globally by emphasizing intellectual rigor and practical skills. Students study development theoretically, but also learn concrete technical and managerial skills necessary to work in organizations that promote equality in the developing world. Graduates exit the program prepared for professional work in the United Nations, public aid agencies, and charities of all sizes. Often, they pursue work in the private sector, research groups, and prominent nongovernmental organizations.

Degree Requirements and Majors

Students must complete at least 48 credits in international development and may choose one of five majors: Energy & Environment, Human Security, Nongovernmental Organizations & Civil Society, Urban Affairs & Planning, or Governance & International Public Management. Students may also pursue a minor in any of these fields, or in any of the following fields offered by GSPIA's other degree programs.

Prior to graduation, students must also complete a 300-hour internship with an approval from GSPIA career services.

Joint Degree Options

MID students are eligible to pursue one of several joint degrees at the University of Pittsburgh, including a joint MID/law degree (JD), MID/Master of Business Administration (MBA), MID/Master of Public Health (MPH), MID/Master of Science in Information Science (MSIS), and MID/Master of Social Work (MSW). They may also pursue a joint master's degree through the University of Geneva in Switzerland or the Graduate School of International Cooperative Studies at Kobe University in Japan. An accelerated, five-year bachelor's/master's degree program is available to select University of Pittsburgh undergraduates.

Area Studies Certificate Options

MPIA students are eligible to combine their master's degree with a graduate certificate from the University Center for International Studies, specializing in Africa, Asia, western Europe, eastern Europe, the European Union, Latin America, or Russia.

Energy & Environment, JD/MID
Requirements for the joint degree MID/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see for Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major courses.

Energy and Environment

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
  OR
- PIA 2523 - GLOBAL ENERGY POLICY
  OR
- PIA 2115 - ENVIRONMENTAL ECONOMICS
  OR
- PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
Energy & Environment, MID/MBA

Requirements for the joint degree MID/MBA

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS
  (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)

OR

- PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Business Administration requirements: 39 or 40.5 credits

(see Business Administration website for requirements)

Total Number of Credits for Joint Degree: 75.5 or 76

Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major courses.

Energy and Environment
PIA 2231 - CONTEMPORARY US ENERGY POLICY
OR
PIA 2523 - GLOBAL ENERGY POLICY
OR
PIA 2115 - ENVIRONMENTAL ECONOMICS
OR
PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
OR
PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT
OR
PIA 2xxx - Approved E&E Major Course

Energy & Environment, MID/MIS

Requirements for the joint degree MID/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT
  (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66
Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major course.

Energy and Environment

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
- OR
- PIA 2523 - GLOBAL ENERGY POLICY
- OR
- PIA 2115 - ENVIRONMENTAL ECONOMICS
- OR
- PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
- OR
- PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT
- PIA 2xxx - Approved E&E Major Course

Energy & Environment, MID/MPH

Requirements for the joint degree MID/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (see 24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits
Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major courses.

Energy and Environment

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
- OR
- PIA 2523 - GLOBAL ENERGY POLICY
- OR
- PIA 2115 - ENVIRONMENTAL ECONOMICS
- OR
- PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
- OR
- PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT
- PIA 2xxx - Approved E&E Major Course

Energy & Environment, MID/MSW

Requirements for the joint degree MID/SW

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-requisites: PIA 2024 & PIA 2025 or 2026 or 2027)

Major Courses: 12 credits
Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Social Work requirements: 51 credits

Total Number of Credits for Joint Degree: 87

Major Specific Requirements:

Students must take three of the following five courses & one additional approved E&E major courses.

Energy and Environment

• PIA 2231 - CONTEMPORARY US ENERGY POLICY
  OR
• PIA 2523 - GLOBAL ENERGY POLICY
  OR
• PIA 2115 - ENVIRONMENTAL ECONOMICS
  OR
• PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
  OR
• PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT

• PIA 2xxx - Approved E&E Major Course

Governance & International Public Management, JD/MID

Requirements for the joint degree MID/JD

GSPIA Core Requirements: 12 credits

• PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
• PIA 2025 - MICROECONOMICS 1
• PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
• PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
• PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
• PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
• PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)
Degree Core Courses: 9 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see for Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Governance & International Public Management (GIPM)

- PIA 2xxx - Approved GIPM Major Course
- PIA 2xxx - Approved GIPM Major Course
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
  OR
- PIA 2124 - COMPARATIVE METROPOLITAN GOVERNANCE
- PIA 2552 - MANAGING ORGANIZATIONS IN DEVELOPMENT
  OR
- PIA 2199 - ADVANCED SEMINAR: INTERNATIONAL PUBLIC MANAGEMENT
  OR
- PIA 2011 - MANAGING INTERNATIONAL ORGANIZATIONS
  OR
- PIA 3393 - COMPARATIVE PUBLIC ADMINISTRATION

Governance & International Public Management, MID/MBA

Requirements for the joint degree MID/MBA

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS
  (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
• PIA 2025 - MICROECONOMICS I
• PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
• PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
• PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

• PIA 2096 - CAPSTON SEMINAR: (24 credits)

OR

• PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits
• PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
• PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits
(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Business Administration requirements: 39 or 40.5 credits
(see Business Administration website for requirements)

Total Number of Credits for Joint Degree: 75.5 or 76

Major Specific Requirements:

Governance & International Public Management (GIPM)

• PIA 2xxx - Approved GIPM Major Course
• PIA 2xxx - Approved GIPM Major Course
• PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY

OR
• PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
• PIA 2124 - COMPARATIVE METROPOLITAN GOVERNANCE

OR
• PIA 2552 - MANAGING ORGANIZATIONS IN DEVELOPMENT
• PIA 2199 - ADVANCED SEMINAR: INTERNATIONAL PUBLIC MANAGEMENT

OR
• PIA 2011 - MANAGING INTERNATIONAL ORGANIZATIONS
• PIA 3393 - COMPARATIVE PUBLIC ADMINISTRATION
Governance & International Public Management, MID/MIS

Requirements for the joint degree MID/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT
  (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Governance & International Public Management (GIPM)

- PIA 2xxx - Approved GIPM Major Course
- PIA 2xxx - Approved GIPM Major Course
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
- OR
Governance & International Public Management, MID/MPH

Requirements for the joint degree MID/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS I
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (see 24 credits)

OR

- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:
Governance & International Public Management (GIPM)

- PIA 2xxx - Approved GIPM Major Course
- PIA 2xxx - Approved GIPM Major Course
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
  OR
- PIA 2124 - COMPARATIVE METROPOLITAN GOVERNANCE
- PIA 2552 - MANAGING ORGANIZATIONS IN DEVELOPMENT
  OR
- PIA 2199 - ADVANCED SEMINAR: INTERNATIONAL PUBLIC MANAGEMENT
  OR
- PIA 2011 - MANAGING INTERNATIONAL ORGANIZATIONS
  OR
- PIA 3393 - COMPARATIVE PUBLIC ADMINISTRATION

Governance & International Public Management, MID/MSW

Requirements for the joint degree MID/SW

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS I
- PIA 2028 - PUBLIC POLICY ANALYSIS (PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-requisites: PIA 2024 & PIA 2025 or 2026 or 2027)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits
Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87

Major Specific Requirements:

Governance & International Public Management (GIPM)

- PIA 2xxx - Approved GIPM Major Course
- PIA 2xxx - Approved GIPM Major Course
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
  OR
- PIA 2124 - COMPARATIVE METROPOLITAN GOVERNANCE
  OR
- PIA 2552 - MANAGING ORGANIZATIONS IN DEVELOPMENT
  OR
- PIA 2199 - ADVANCED SEMINAR: INTERNATIONAL PUBLIC MANAGEMENT
  OR
- PIA 2011 - MANAGING INTERNATIONAL ORGANIZATIONS
  OR
- PIA 3393 - COMPARATIVE PUBLIC ADMINISTRATION

Human Security, JD/MID

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of International Development and Juris Doctor

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

Note
Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MID/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see for Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Human Security

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
Human Security, MBA/MID

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of International Development and Master of Business Administration

For MPIA and MID students only: Combining a GSPIA degree with an MBA opens many opportunities for a career in international finance, government financial regulation, or multinational corporations. Students with both degrees are highly marketable in the fields of international business and international economic policy.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MID/MBA

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS
  (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits
PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits
(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Business Administration requirements: 39 or 40.5 credits
(see Business Administration website for requirements)

Total Number of Credits for Joint Degree: 75.5 or 76

Major Specific Requirements:

Human Security

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course

Human Security, MID/MIS

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of International Development and Master of Science in Information Science
The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Major Specific Requirements:

Human Security

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course

Requirements for the joint degree MID/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)

OR

- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT
  (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits
Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Human Security, MID/MPH

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of International Development and Master of Public Health

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MID/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (see 24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Human Security

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course

Human Security, MID/MSW

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students
spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of International Development and Master of Social Work**

Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

**Major Specific Requirements:**

**Human Security**

- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course
- PIA 2xxx - Approved HS Major Course

**Requirements for the joint degree MID/SW**

**GSPIA Core Requirements: 12 credits**

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)

**OR**

- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

**Degree Core Courses: 6 credits**

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87

Nongovernmental Organizations and Civil Societies, JD/MID

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of International Development and Juris Doctor

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MID/JD
GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see for Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Nongovernmental Organizations & Civil Societies

- PIA 2526 - NGOS CIVIL SOCIETY AND DEVELOPMENT
  OR
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
  
- PIA 2xxx - Approved NGOCS Major Course
- PIA 2xxx - Approved NGOCS Major Course
- PIA 2xxx - Approved NGOCS Major Course

Nongovernmental Organizations and Civil Societies, MBA/MID
Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of International Development and Master of Business Administration

For MPIA and MID students only: Combining a GSPIA degree with an MBA opens many opportunities for a career in international finance, government financial regulation, or multinational corporations. Students with both degrees are highly marketable in the fields of international business and international economic policy.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MID/MBA

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS
  (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits
Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Business Administration requirements: 39 or 40.5 credits

(see Business Administration website for requirements)

Total Number of Credits for Joint Degree: 75.5 or 76

Major Specific Requirements:

Nongovernmental Organizations & Civil Societies

- PIA 2526 - NGOS CIVIL SOCIETY AND DEVELOPMENT
- OR
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
- PIA 2xxx - Approved NGOCS Major Course
- PIA 2xxx - Approved NGOCS Major Course
- PIA 2xxx - Approved NGOCS Major Course

Nongovernmental Organizations and Civil Societies, MID/MIS

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of International Development and Master of Science in Information Science

The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.
Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MID/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS I
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
  PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT
  (pre req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)

Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Nongovernmental Organizations & Civil Societies

- PIA 2526 - NGOS CIVIL SOCIETY AND DEVELOPMENT
  OR
Nongovernmental Organizations and Civil Societies, MID/MPH

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of International Development and Master of Public Health

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MID/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (see 24 credits)

OR
Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78

Major Specific Requirements:

Nongovernmental Organizations & Civil Societies

- PIA 2526 - NGOS CIVIL SOCIETY AND DEVELOPMENT
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
- PIA 2xxx - Approved NGOCS Major Course
- PIA 2xxx - Approved NGOCS Major Course
- PIA 2xxx - Approved NGOCS Major Course

Nongovernmental Organizations and Civil Societies, MID/MSW

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.
Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of International Development and Master of Social Work**

Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

**Note**

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

**Requirements for the joint degree MID/SW**

**GSPIA Core Requirements: 12 credits**

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

**OR**

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

**Degree Core Courses: 6 credits**

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-requisites: PIA 2024 & PIA 2025 or 2026 or 2027)

**Major Courses: 12 credits**

(see Major-Specific requirements)

**Electives: 6 credits**

**Minimum Required GSPIA Credits: 36 credits**

**Master of Social Work requirements: 51 credits**

(see Social Work website for requirements)
Total Number of Credits for Joint Degree: 87

Major Specific Requirements:

Nongovernmental Organizations & Civil Societies

- PIA 2526 - NGOS CIVIL SOCIETY AND DEVELOPMENT
- OR
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
- PIA 2xxx - Approved NGOCS Major Course
- PIA 2xxx - Approved NGOCS Major Course
- PIA 2xxx - Approved NGOCS Major Course

Urban Affairs & Planning, JD/MID

Requirements for the joint degree MID/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see for Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits
Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

Urban Affairs & Planning (UAP)

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course

Urban Affairs & Planning, MID/MBA

Requirements for the joint degree MID/MBA

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS
  (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2002 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Business Administration requirements: 39 or 40.5 credits

(see Business Administration website for requirements)
Total Number of Credits for Joint Degree: 75.5 or 76

Major Specific Requirements:

Urban Affairs & Planning (UAP)

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course

Urban Affairs & Planning, MID/MIS

Requirements for the joint degree MID/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS I
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT
  (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30 credits

(see Information Science website for requirements)
Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

Urban Affairs & Planning (UAP)

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course

Urban Affairs & Planning, MID/MPH

Requirements for the joint degree MID/MPH

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS I
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (see 24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Public Health requirements: 42 credits

(see Public Health website for requirements)

Total Number of Credits for Joint Degree: 78
Major Specific Requirements:

Urban Affairs & Planning (UAP)

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course

Urban Affairs & Planning, MID/MSW

Requirements for the joint degree MID/SW

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- PIA 2028 - PUBLIC POLICY ANALYSIS (PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-requisites: PIA 2024 & PIA 2025 or 2026 or 2027)

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 6 credits

Minimum Required GSPIA Credits: 36 credits

Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87

Major Specific Requirements:
Energy & Environment, MID

Energy and Environment explores the politics and policies of the worldwide energy industry, examining ways to meet global energy needs in a sustainable, environmentally conscious way. Pittsburgh is a global epicenter of one of the biggest energy revolutions of the 21st century - the shale gas boom. New technologies like "fracking" are making billions of dollars of natural gas accessible to world markets for the first time, generating thousands of new jobs from Europe to North America. Western Pennsylvania sits atop one of the largest and most productive shale deposits anywhere on the planet, raising major questions about how to extract the gas responsibly, how to protect communities from environmental harm, and how to tax and regulate the rapid growth. GSPIA Students study the economics of the global energy industry, environmental sustainability, and regulatory policy in one of the world's best living laboratories. Graduates are prepared for jobs at environmental protection agencies, energy corporations, and a host of local, state, and national government offices that make energy policy.

Energy & Environment (E&E)

The major curriculum, comprising 12 credits, follows:

GSPIA core Requirements (See Master's Degree Requirements): 12 credits

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT

Major Courses: 12 credits

- PIA 2xxx - Approved E&E Major Course

Three of the following five courses:

- PIA 2231 - CONTEMPORARY US ENERGY POLICY
- PIA 2523 - GLOBAL ENERGY POLICY
- PIA 2115 - ENVIRONMENTAL ECONOMICS
- PIA 2502 - GLOBAL ENVIRONMENTAL POLICY
- PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT

Electives: 18 credits

Minimum Required Credits: 48 credits

Governance & International Public Management, GIPM/MID

Governance and International Public Management provides a comparative perspective on international development, focusing on the ways in which public and nonprofit organizations must adapt to meet the different cultural, political, and economic circumstances of the communities they serve.
It explores how public agencies around the globe, faced with similar problems like poverty, illiteracy, and inequality, have addressed those issues differently in different countries. Students confront the challenges of implementing complex policies in a global, multicultural context. This major focuses on developing the management and analytical skills necessary to take leadership roles in the multilateral sector, governments abroad, or any organization that delivers services internationally. Graduates are well-prepared to pursue careers at the United Nations, the U.S. Agency for International Development, and similar organizations.

Core: Governance & International Public Management (GIPM)

The major curriculum, comprising 12 credits, follows:

GSPIA core Requirements (See Master's Degree Requirements): 12 credits

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre-req: PIA 2025)

Major Courses: 12 credits

- PIA 2xxx - Approved GIPM Major Course
- PIA 2xxx - Approved GIPM Major Course

Two of the following four courses:

- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
- PIA 2552 - MANAGING ORGANIZATIONS IN DEVELOPMENT
- PIA 2519 - COMPARATIVE GOVERNANCE
- PIA 2180 - COMPARATIVE PUBLIC ADMINISTRATION

Electives: 18 credits

Minimum Required Credits: 48 credits

Human Security, MID

Human Security (HS)

Because the globalization process has made the world seem exponentially smaller, threats from tsunamis, earthquakes, disease and starvation are arriving faster and in more dramatic fashion than ever before. One of the most innovative, forward-thinking disciplines in international affairs today, the human security major covers a wide swath of issues critical to the safety of people worldwide.

GSPIA's program, one of the first of its kind in the United States, emphasizes the development of peacekeeping and peace-building skills. Students study threats to individuals from nongovernmental, nonmilitary sources. Examples of threats include civil wars, international migration and crime, global climate changes and natural disasters. We teach students to focus on the human condition as a planet, resulting in a new generation of leaders able to guide our global community through some of the most perilous times is has ever experienced.
The major curriculum, comprising 12 credits, follows:

GSPIA Core Requirements: 12 credits

(See Master's Degree Requirements)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre req: PIA 2025)

HS Major Courses: 12 credits

- PIA 2307 - HUMAN SECURITY
- PIA XXXX Approved HS major course
- PIA XXXX Approved HS major course
- PIA XXXX Approved HS major course

Electives: 18 credits

Minimum Required Credits: 48 credits

**Nongovernmental Organizations and Civil Society, MID**

NGOs and Civil Society (NGOCS)

Much of the work that has defined change around the world has been the domain of nongovernmental organizations (NGO's). The nongovernmental organizations and civil society (NGOCS) major prepares students for a future in a world where NGO's are committed to social change in the shifting landscape of the human condition. Students acquire knowledge in management strategies and politics and courses cover such topics as alleviating hunger, advocating for human rights and promoting public health.

GSPIA NGOCS students have the opportunity to develop experience through internships, both domestic and international, as well as the change to build expertise in issues such as grant writing, education or health care that will serve them well following graduation. Our approach is to act as advocates of change with our courses and faculty inspiring and empowering students to make a difference. Graduates go on to work with individual governments, regions and communities around the globe to improve the quality of life.

The major curriculum, comprising 12 credits, follows:

GSPIA Core Requirements: 12 credits

(See Master's Degree Requirements)

Degree Core Courses: 6 credits

- PIA 2501 - DEVELOPMENT POLICY AND ADMINISTRATION
- PIA 2510 - ECONOMICS OF DEVELOPMENT (pre:req: PIA 2025)
NGOCS Major Courses: 12 credits

- PIA 2526 - NGOS CIVIL SOCIETY AND DEVELOPMENT
  OR
- PIA 2528 - GOVERNANCE, LOCAL GOVERNMENT AND CIVIL SOCIETY
- PIA XXXX Approved NGOCS major course
- PIA XXXX Approved NGOCS major course
- PIA XXXX Approved NGOCS major course

Electives: 18 credits

Minimum Required Credits: 48 credits

Urban Affairs & Planning, MID

Urban Affairs & Planning (UAP)

Urban Affairs and Planning takes a city-focused perspective on international development. More than half of the world's people now live in urban areas, raising important questions about how governments should meet the public's needs for transportation, health and sanitation, education, and other essential services.

As the developing world urbanizes, booming cities like Shanghai, Mumbai, Buenos Aires, and Johannesburg face critical challenges, including poverty, homelessness, and pollution. The major prepares students to confront those problems on an international scale, while developing valuable skills in Geographic Information Systems (GIS), regional economic planning, and sustainable development management. Students take advantage of GSPIA's highly regarded Center for Metropolitan Studies, participating in cutting-edge research alongside faculty experts.

The major curriculum, comprising 12 credits, follows:

GSPIA Core Requirements (See Master's Degree Requirements): 12 credits

Degree Core Courses: 6 credits

Major Courses: 12 credits

- PIA 2125 - CITY AND REGION THEORY AND PRACTICE
- PIA 2715 - GIS FOR PUBLIC POLICY
- PIA 2740 - PLN & ANAL SUSTAINABLE REGIONS
- PIA 2xxx - Approved UAP Major Course

Electives: 18 credits

Minimum Required Credits: 48 credits

Nongovernmental Organizations and Civil Society Minor

The requirements for the Nongovernmental Organizations & Civil Society Minor are:
PIA 2526     Micropolitics: NGO's, Development & Civil Society (3cr)
PIA 2528     Governance, Local Government, & Civil Society (3cr)
PIA 2552     Managing Organizations in Development (3cr)

With approval, appropriate courses may be substituted for those listed above. No course may be double-counted. Any course taken to fulfill a requirement for your degree or major cannot also count toward your minor. In such cases, an approved course must be substituted. Please consult with your graduate enrollment counselor.

Department of Public Policy and Management

Master of Public Policy & Management (MPPM)

- Traditional Master of Public Policy and Management (MPPM)

The accelerated, 30-credit Master of Public Policy and Management (MPPM) degree provides mid-career professionals an opportunity to expand their knowledge, develop new analytic tools and professional skills, explore new ideas and theories, and interact with experienced faculty and practitioners. The program is designed to help enhance and advance the careers of professionals in the public and nonprofit sectors. It is also ideal for professionals in other fields looking to change careers, and begin a new, rewarding life in public service. Degree requirements can be completed within one year of full-time study or two years of part-time study.

- Online Master of Public Policy and Management (MPPM)

The online Master of Public Policy and Management (MPPM) degree is a part-time, 30-credit program for mid-career professionals with at least five years of full-time work experience. It is an online version of the MPPM program that GSPIA has offered to talented mid-career students for more than a decade. Students who apply to the MPPM program may now choose whether they want to pursue the degree in its traditional, on-campus format or in a 100% online format.

Special Admissions Requirements

The MPPM program seeks applicants with a bachelor's degree and a minimum of five or more years of experience beyond an entry-level position. Candidates' experience should demonstrate increasing levels of responsibility, leadership, and professional competence, particularly in areas such as budgeting and finance, human resource management, or policy formulation or implementation. Candidates with fewer than five years of such experience should not apply to the MPPM program, but should apply instead to one of GSPIA's other, 48-credit master's degree programs. The flexible curriculum of the MPPM program is ideal for full-time and part-time students, as it allows them to take any of the courses offered at GSPIA. Students are free to study international affairs, international development, or public administration, and may focus their course selection on any of the fields of study offered under GSPIA's traditional, 48-credit master's degree programs.

International Political Economy, JD/MPIA

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.
To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public and International Affairs and Juris Doctor

The joint JD allows students to combine the study of law and policy, preparing them equally well for employment in the judicial or executive branches of government. Graduates are positioned to work in international law firms, nonprofit advocacy, and in public or nonprofit agencies that require knowledge of legal issues, such as refugee services and the Department of Justice. Pitt Law School also partners with GSPIA in the University of Pittsburgh's Washington Center.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/JD

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additional lecture)
- PIA 2025 - MICROECONOMICS 1
- OR
- PIA 2027 - MACROECONOMICS
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req. PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Juris Doctor requirements: 79 credits

(see Law website for requirements)

Total Number of Credits for Joint Degree: 115

Major Specific Requirements:

International Political Economy

- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course

International Political Economy, MBA/MPIA

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA’s partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public and International Affairs and Master of Business Administration
For MPIA and MID students only: Combining a GSPIA degree with an MBA opens many opportunities for a career in international finance, government financial regulation, or multinational corporations. Students with both degrees are highly marketable in the fields of international business and international economic policy.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MBA

Student is required to take one of the following depending on major:

If SIS major:  PIA 2303 Security & Intelligence Studies

If IPE major:  PIA 2301 International Political Economy

If HS major:   PIA 2307 Human Security

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced by an additiona elective)
- PIA 2025 - MICROECONOMICS I
  OR
- PIA 2027 - MACROECONOMICS
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits

- PIA 2363 - INTERNATIONAL HISTORY
- PIA 2021 - INTERNATIONAL AFFAIRS

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY
Major Courses: 12 credits
(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Business Administration requirements: 39 or 40.5 credits
(see Business Administration website for requirements)

Total Number of Credits for Joint Degree: 75.5 or 76

Major Specific Requirements:

International Political Economy

- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course

**International Political Economy, MPIA/MIS**

**Joint Degree**

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

**Master of Public & International Affairs and Master of Science in Information Science**
The joint MSIS degree allows GSPIA students to combine the study of public management and information technology management, at a time when both fields are increasingly interconnected. Students are prepared to pursue public or nonprofit-sector careers that require strong knowledge of modern information systems.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MIS

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waive exam. If waived, the class must be replaced by an additional elective)
- PIA 2025 - MICROECONOMICS 1
- OR
- PIA 2027 - MACROECONOMICS
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career counselor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career counselor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
- OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Information Science requirements: 30
Total Number of Credits for Joint Degree: 66

Major Specific Requirements:

International Political Economy

- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course

International Political Economy, MPIA/MPH

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public & International Affairs and Master of Public Health

Students pursuing a joint MPH gain a unique perspective on public management, government responses to epidemics, and the effect of sanitation on international development. They study health policy and the science behind it, both at the local level and on the world stage, where disease recognizes no borders. Graduates are employed by medical relief agencies, nonprofit organizations that distribute vaccines, and government authorities responsible for protecting society from epidemics.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MPH

GSPIA Core Requirements: 12 credits
- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. if waived, the class must be replaced by an additional elective)

- PIA 2025 - MICROECONOMICS 1
  OR
  - PIA 2027 - MACROECONOMICS

- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)

- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
  - PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

**Degree Core Courses: 9 credits**

- PIA 2021 - INTERNATIONAL AFFAIRS
- PIA 2363 - INTERNATIONAL HISTORY

**One of the following based on major:**

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY

**Major Courses: 12 credits**

(see Major-Specific requirements)

**Electives: 3 credits**

**Minimum Required GSPIA Credits: 36 credits**

**Master of Public Health requirements: 42 credits**

(see Public Health website for requirements)

**Total Number of Credits for Joint Degree: 78**

**Major Specific Requirements:**

**International Political Economy**

- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
International Political Economy, MPIA/MSW

Joint Degree

Full-time GSPIA students in the MPA, MPIA, or MID programs may pursue two graduate degrees simultaneously, through GSPIA's partnerships with other professional schools at the University of Pittsburgh (and two foreign universities). Joint programs reduce the number of credits needed for each degree, allowing students to earn two master's degrees in just three years, or a master's degree and a law degree in just four years.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements. Those applying to the joint JD program with the University of Pittsburgh School of Law may submit an LSAT score as a substitute for GSPIA's GRE requirement. Those applying to the joint MBA program may submit the GMAT as a substitute for the GRE. If admitted to both schools, students spend one full year in GSPIA followed by a second full year in the other program (or vice versa). During the third and/or fourth year, they spend a minimum of one additional term in GSPIA, earning a total of 36 GSPIA credits.

Although it is possible to apply to both schools at the same time, currently enrolled students may still apply for a joint degree as long as they have not yet completed one year (or, in the case of current law students, two years) of full-time study.

Master of Public & International Affairs and Master of Social Work

Today's community building arena demands well-trained professionals across a wider array of skills and systems than one degree program may offer. That's why the joint degree program between GSPIA and School of Social Work provides students with focused professional education in the community building arena to prepare them for careers in non-profit and government organizations, community development, social policy, and urban and regional affairs.

Note

Joint-degree students take a minimum of 36 credits and must have 3 terms of GSPIA residency. Students must graduate from both schools at the same time. No course may be double-counted. Any course taken to fulfill a requirement for the degree in one program cannot also count toward the degree in the other program. Joint degree students should contact their GSPIA Graduate Enrollment Counselor once a term for advising. Graduate Enrollment Counselors advise for GSPIA programs only. Joint degree students must meet with an advisor from both schools.

Requirements for the joint degree MPIA/MSW

GSPIA Core Requirements: 12 credits

- PIA 2022 - QUANTITATIVE METHODS (students may waive PIA 2022 if they pass the waiver exam. If waived, the class must be replaced with an additional elective)
- PIA 2025 - MICROECONOMICS 1
  OR
- PIA 2027 - MACROECONOMICS
- PIA 2028 - PUBLIC POLICY ANALYSIS (pre-req: PIA 2022)
- PIA 2094 - PROFESSIONAL DEVELOPMENT PROGRAM (may be waived, see career advisor in first term)
- PIA 2098 - INTERNSHIP (may be waived, see career advisor in first term)
- PIA 2096 - CAPSTON SEMINAR: (24 credits)
  OR
- PIA 2099 - THESIS (24 credits prior + PIA 2003 + approval by graduate enrollment counselor)

Degree Core Courses: 9 credits
PIA 2021 - INTERNATIONAL AFFAIRS
PIA 2363 - INTERNATIONAL HISTORY

One of the following based on major:

- PIA 2301 - INTERNATIONAL POLITICAL ECONOMY or
- PIA 2303 - SECURITY AND INTELLIGENCE STUDIES or
- PIA 2307 - HUMAN SECURITY

Major Courses: 12 credits

(see Major-Specific requirements)

Electives: 3 credits

Minimum Required GSPIA Credits: 36 credits

Master of Social Work requirements: 51 credits

(see Social Work website for requirements)

Total Number of Credits for Joint Degree: 87

Major Specific Requirements:

International Political Economy

- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course
- PIA 2xxx - Approved IPE Major Course

International Political Economy Minor

The requirements for the International Political Economy major are:

PIA 2301     International Political Economy (3cr)
PIA 2302     International Financial Policy (3cr)
PIA 2310     States & Markets (3cr)

or

PIA 2319     International Trade (3r)

Public Policy and Management, MPPM
Master of Public Policy and Management (MPPM)

Accelerated Mid-Career Masters (Traditional)

The accelerated mid-career, 30-credit Master of Public Policy and Management (MPPM) degree provides mid-career professionals an opportunity to expand their knowledge, develop new analytic tools and professional skills, explore new ideas and theories, and interact with experienced faculty and practitioners.

The program is designed to help enhance and advance the careers of professionals in the public and nonprofit sectors. It is also ideal for professionals in other fields looking to change careers, and begin a new, rewarding life in public service. Degree requirements can be completed within one year of full-time study or two years of part-time study. Students may specialize in security & intelligence, global political economy, human security, development planning & environmental sustainability, non-governmental organizations & civil society, urban & regional planning, public & nonprofit management, and policy research & analysis.

The MPPM program seeks applicants with a bachelor's degree and a minimum of five or more years of experience beyond an entry-level position. Candidates' experience should demonstrate increasing levels of responsibility, leadership, and professional competence, particularly in areas such as budgeting and finance, human resource management, or policy formulation or implementation. Candidates with fewer than five years of such experience should not apply to the MPPM program, but should apply instead to one of GSPIA's other, 48-credit master's degree programs.

Online Accelerated Mid-Career Masters

The online Master of Public Policy and Management (MPPM) degree is a part-time, 30-credit program for mid-career professionals with at least five years of full-time work experience. It is an online version of the MPPM program that GSPIA has offered to talented mid-career students for more than a decade. Students who apply to the MPPM program may now choose whether they want to pursue the degree in its traditional, on-campus format or in a 100% online format.

The program provides mid-career professionals with an opportunity to expand their knowledge, develop new analytic tools and professional skills, explore new ideas and theories, and interact with experienced faculty and practitioners. It is designed to help enhance and advance the careers of working professionals in the public and nonprofit sectors, but is also ideal for professionals in other fields looking to change careers, and begin a new, rewarding life in public service.

Online Program Structure

As an online MPPM student, you will enroll in two web-based courses (for a total of 6 credits) per term. You will be able to complete the 30-credit degree in just five terms. By taking courses during the spring, summer, and fall terms, you can earn your degree in just 20 months. You may, if you prefer, complete the program at a slower pace by taking just one course at a time.

You will follow a set curriculum of online courses, all of which are taught by regular GSPIA faculty who are dedicated to your success, wherever you are. You will complete your coursework using the Pitt Online Website, where you can login at your convenience to view course material and submit assignments.

In addition to the professors teaching your courses, you will be assigned to a faculty advisor and a full-time enrollment counselor who will be able to assist you by phone, Skype, or email with any questions you may have. Your advisor and enrollment counselor will help you navigate the registration process and work with you throughout your time at GSPIA to ensure your success.

Traditional Requirements:

MPPM Core Courses: 12 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS

OR
Specialization Courses (six courses): 18 credits

- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course

Minimum Required Credits: 30 credits

Online Requirements

Online MPPM Core Courses: 12 credits

- PIA 2020 - ADMINISTRATION OF PUBLIC AFFAIRS
- PIA 2025 - MICROECONOMICS 1
- PIA 2117 - PROGRAM EVALUATION
- PIA 2896 - MPPM POLICY SEMINAR

Online specialization courses (six courses): 18 credits

Online MPPM students must take an additional 18 credits beyond the core.

- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course
- PIA 2xxx - MPPM specialization course

Minimum Required Credits: 30 credits
Graduate School of Public Health

Note: Students should refer to the catalog in use in their year of matriculation for course and credit requirements. All other information should be obtained from the current catalog.

The Graduate School of Public Health consists of programs offered by the Departments of Behavioral and Community Health Sciences, Biostatistics, Environmental and Occupational Health, Epidemiology, Health Policy and Management, Human Genetics, and Infectious Diseases and Microbiology, the multidisciplinary MPH program for doctoral-level health professionals, and nine certificates. Programs and specialty tracks, including joint programs, are detailed under individual department sections.

The mission of the Graduate School of Public Health (Pitt Public Health) is to promote health, prevent disease, and achieve health equity for everyone through leadership in education, research, and service. Visit our Web site, www.publichealth.pitt.edu, for more information.

Contact Information

Office of Student Affairs
A519 Crabtree
412-624-3002
Fax: 412-624-3755
E-mail: stuaff@pitt.edu
www.publichealth.pitt.edu

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Joint, Dual, and Cooperative Degree Programs

Behavioral and Community Health Sciences/Arts and Sciences (Anthropology) MPH and PhD
Behavioral and Community Health Sciences/Social Work MPH and PhD or MPH and MSW

Behavioral and Community Health Sciences/Public and International Affairs MPH and MPA or MPH and MID or MPH and MPIA

Epidemiology/Medicine PhD and MD

Genetic Counseling and Public Health Genetics MS AND MPH

Health Policy and Management/Business MHA and MBA

Health Policy and Management/Law MPH and JD

Human Genetics/Medicine PhD and MD

Certificate Programs

Community-Based Participatory Research and Practice

Environmental Health Risk Assessment

Evaluation of Public Health Promotion and Health Education Programs

Global Health

Health Equity

Healthcare Systems Engineering

Health Systems Leadership and Management

Lesbian, Gay, Bisexual, and Transgender Individuals' (LGBT) Health and Wellness

Public Health Genetics

Public Health Preparedness and Disaster Response (Admission to this program has been suspended until further notice.)

Admissions

Application instructions differ depending on whether you are applying for a degree, a certificate, or for non-degree coursework. Please follow the application instructions for your plan of study when applying to Pitt Public Health.

Pitt Public Health has general admission requirements for all applicants, plus each department has requirements specific to their programs. It's important to review both requirements before applying.
Accelerated Master's Degree Program

University of Pittsburgh undergraduates may apply for admission to a number of accelerated master's programs. Designed to allow students to complete a bachelor's and master's degree in approximately 5 years. Students must have completed the number of undergraduate credits required by their school before they can become a Pitt Public Health student. Besides the regular admission requirements, undergraduates must also meet additional requirements, which are specific to this program.

Non-Degree Status

You can take up to 12 credits (cumulative maximum) as a non-degree student. If you are later accepted into a degree program, that program will decide which of those credits may be applied to your requirements.

Requirements

You must have a U.S. bachelor's degree or the equivalent foreign degree to become a non-degree student. You will have to submit transcripts for all education, as well as a WES evaluation for study outside of the U.S. and TOEFL scores, if applicable.

Non-degree applicants must be U.S. citizens or permanent residents. Local applicants currently holding an F or J visa status must contact the Office of Student Affairs to verify eligibility before applying. Pitt Public Health does not sponsor I-20s for non-degree study.

How to Apply

☐ Apply online through SOPHAS Express
  a. Create an account and then go into "My Application"
  b. Under "Manage My Programs" select "University of Pittsburgh" from the drop-down school list and then select appropriate "Interdisciplinary - Non-Degree" option for the semester to which you are applying
  c. Under "My Application" complete all required sections
☐ Pay application fee online directly to SOPHAS Express and submit the application
☐ Submit official transcripts for all education in the United States to Pitt Public Health Office of Student Affairs
☐ Submit a course-by-course WES evaluation for all education outside of the United States (not including study abroad) to Pitt Public Health Office of Student Affairs
☐ Submit official TOEFL scores (if applicable) to the University of Pittsburgh institution code 2927, with no department code.

*Note: Pitt Public Health will only accept non-degree applications through SOPHAS Express. Do not select any other designation or your application will not be processed.

What classes should I take?

If you're planning to apply and you know which department you're interested in, you may want to contact that department directly for suggestions about classes. Many non-degree students choose to enroll in the Pitt Public Health core courses (unless restricted) as a way to learn more about our various programs and/or to start working towards a degree.

Here's a sample of courses that may interest you:

☐ Principles of Epidemiology (EPIDEM 2110)*
☐ Public Health Genetics (HUGEN 2049)
☐ Public Health Overview (PUBHLT 2014)* (not currently active)
☐ Public Health Biology (PUBHLT 2015)*
☐ Social and Behavioral Sciences and Public Health (BCHS 2509)*
☐ Health Policy and Management in Public Health (HPM 2001)*
☐ Environmental Health and Disease (EOH 2013)*
☐ Principles of Statistical Reasoning (BIOST 2011)*

*part of the Pitt Public Health Core Curriculum
Financial Aid

Almost all Pitt Public Health doctoral students and many master's students receive financial aid. Most financial aid is provided through the departments, and the amount of aid available varies among programs. Applicants should contact departments directly for information about available financial aid.

Academic Standards and Academic Integrity

Students are expected to exhibit academic honesty and to uphold the ethical standards of public health professionals. A student who is not in satisfactory academic standing will be placed on probation and may be subject to dismissal. Students should refer to the Pitt Public Health Academic Handbook for complete information on the school's academic performance standards.

Grading Policies

The Graduate School of Public Health follows the University's letter grade system in evaluating student performance in course work, though a variety of options are detailed below.

Pitt Public Health school-wide core courses are graded A, B, C, etc.

Students electing to audit a course must register for the course as for any other course, and must also complete a grade option form in the Office of Student Affairs and obtain the instructor's permission to audit the course. Students receive a grade of N for audited courses and receive no academic credit for the course.

See the Grading and Records section of this bulletin for detailed discussion of University Grading System and Grading Options.

Withdrawal and Resignation

To withdraw from a class after the official add/drop period while still enrolled in other classes, you must process a Monitored Withdrawal Request Form through the dean's office of the school offering the class.

If you wish to drop all of your classes after the end of the add/drop period, you must resign from the term. Adjustments to tuition charges resulting from official resignation (dropping of all courses for the term) are based on the effective date of resignation and in accordance with the federally mandated calculation. If you decide to resign, call the resignation hotline immediately to leave your name and contact information (412-624-7585), as the refund amount is calculated from the date of resignation.

Course Repeat

A student may repeat a course in which a grade of B- or lower is received if authorized by the student's advisor. Students may not repeat a school-wide core course or required departmental course more than once (i.e., course may only be taken twice), and students who fail a school-wide core course or required departmental course twice are subject to dismissal. (See Pitt Public Health academic dismissal and probation guidelines in the Pitt Public Health Academic Handbook. See also Repeating Courses for more information.)

GPA Calculation

In general, a student's Grade Point Average (GPA) is obtained by dividing the total number of letter grade credits taken in the graduate program into the total number of quality points earned in the graduate program.
All University of Pittsburgh courses taken as a Pitt Public Health student are included in the calculation of GPA.

**Advanced Standing and Transfer Credits**

For details on advanced standing and transfer credits, students should consult the Pitt Public Health Academic Handbook. Acceptance of transfer credits is at the discretion of the program.

Acceptance of a maximum of 12 credits taken as a non-degree student at Pitt Public Health is at the discretion of the program.

Students enrolled at Pitt Public Health may take credits in another school or institution, providing that their department has approved application of those credits to the degree requirements. In all cases, any combination of advanced standing credits and credits taken from another school or institution during enrollment at Pitt Public Health may not exceed the limits established by the University or the Regulations Governing Graduate Study at the University of Pittsburgh.

**Academic Advising**

The Graduate School of Public Health considers effective academic advising an essential component of educating students. Departments have the primary responsibility for identifying and assigning to each student a major advisor, who, in consultation with the student, plans a program of study and research in accord with school and departmental guidelines. Departments are expected to provide students with a copy of school and departmental regulations appropriate for their program, and students are expected to become familiar with University, Pitt Public Health, and department regulations concerning graduate study and to accept responsibility for the completion of all degree requirements.

The student's academic advisor is to direct and assist the student in the selection of classes and the conduct of research. Waivers from program requirements are processed at the program level, and waivers from school requirements by the Office of Student Affairs. The Application for Graduation is processed through the Pitt Public Health Office of Student Affairs after clearance has been received from the academic advisor. A student will be certified for graduation only after the academic advisor has confirmed that all degree requirements have been met.

For students required to take preliminary, comprehensive, or defense examinations, the academic advisor, in consultation with the student, designates faculty members to act as the examining committee.

Each doctoral student is required to complete an Independent Development Plan per year and to submit it to his/her advisor. A suggested template is provided.

Each doctoral student, together with the student's doctoral committee, is responsible for assuring accomplishment of all elements of the student's course of studies, including the core requirements, the research tools requirement, course work in the field of specialization, advanced standing, the qualifying and comprehensive examinations, and the dissertation overview and its final oral defense.

**Career Services**

Pitt Public Health - The Career Services office offers programs, services and resources to help master's and doctoral students as they prepare for employment or additional training in their chosen field of study. These services include Pitt Bridges, an online job board where jobs and training positions are posted weekly. Career counseling appointments are available to help with resume/CV critiques, cover letters, and mock interviews. Students can also register for skills-based workshops that are held regularly on a variety of topics. Networking functions and public health job fairs are also sponsored by this office.

**Faculty**

GSPH Primary Faculty

**Program and Course Offerings**
A number of courses of general interest to all departments are offered. Course descriptions and a current schedule are available to students. A list of course offerings by department may be accessed through the departmental sections of this catalog.

Multidisciplinary, MPH

Program Requirements

The mission of the Multidisciplinary Master of Public Health (MMPH) degree program is to prepare doctoral level health professionals to practice in community, public, and global health settings. They will use population-based concepts, health education, health promotion and the preventive components of public and personal health care and practice. The educational program provides these individuals who have varied health science backgrounds with the advanced public health training in which they can incorporate and apply the public health knowledge and skills in a public or private setting. The program is designed to foster a comprehensive overview to bridge the gaps among public health disciplines and subdisciplines. The MMPH is uniquely designed for individuals with advanced degrees (MD, RN, DDS, DO...) and allows them the freedom to self-design their MPH. Comprised of the Pitt Public Health core curriculum (19-21 credits) the students are encouraged to choose electives from varied public health departments to form an area of focus of relevance to them. This self-designed degree gives the student the flexibility necessary to work around busy clinical schedules. Upon completion of the MMPH, students will have an understanding of statistics, health policy, research design and the ability to contribute to new research in their chosen fields of interest.

In addition to the Public Health core courses, students must complete a master's essay under the guidance of a faculty committee and register for a practicum experience. The curriculum consists of 42 credits and can be completed in a year.

Although the program has a 42 credit requirement, six credits of advanced standing or transfer credits may be applied, making it possible for an eligible student to complete 36 credits.

Note:

Aside from the core requirements, the MMPH curriculum is flexible. The student should work with the program director upon admission to identify competencies (goals) for his or her program, and suggested courses for achieving those competencies. Additionally, students must complete a 200 hour practicum and a final essay.

* No more than six credits may be taken in other university graduate programs.

Pitt Public Health Core Requirements

- BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING
  *Students must take either BIOST 2011 or BIOST 2041
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS I
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
* Can be waived if student has a clinical degree
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
  *Must register for two terms
- PUBHLT 2033 - FOUNDATIONS IN PUBLIC HEALTH
- PUBHLT 2034 - PUBLIC HEALTH COMMUNICATIONS
- PUBHLT 2035 - APPLICATIONS IN PUBLIC HEALTH

Global Health Certificate
This program educates students about current health patterns and transitions occurring globally, as well as about the role of dynamic global environmental, political, economic, health care, and social changes to these patterns.

Coursework consists of 7 credits of core courses and 8 credits of additional coursework aligned with the individual student's specific area of interest and intended skillset. Students must complete a field experience, which can be combined with the required practicum for the degree program provided the experience is relevant to global health. Students have the opportunity to complete this global health practicum in the form of local opportunities or in an international setting.

Required Courses

The certificate core courses cannot overlap with any other departmental requirement. Overlap is permitted for the remaining required courses and these may also fulfill departmental requirements.

- PUBHLT 2025 - CONCEPTS AND METHODS IN GLOBAL HEALTH
- PUBHLT 2027 - TRANSFORMING GLOBAL HEALTH EDUCATION INTO ACTION

One course from the Graduate School of Public and International Affairs is required from the list of approved classes (3 credits)

Department of Biostatistics

Biostatistics is an innovative field that involves the design, analysis, and interpretation of data for studies in public health and medicine. Biostatistics experts arrive at conclusions about disease and health risks by evaluating and applying mathematical and statistical formulas to the factors that impact health.

Students at Pitt Public Health benefit from collaboration with UPMC, Pennsylvania's largest academic medical center, and have access to extensive University computing facilities. Through rigorous courses, students gain a comprehensive understanding of statistical methods in the context of public health and medical problems; work with faculty on developing new and innovative methodologies and analytical techniques; and have the opportunity through both research and service to apply these methods to current and pressing concerns in biomedicine and public health.

Contact Information

General Inquiries
biostat@pitt.edu

PhD Program
Abdus S. Wahed, PhD
Director, Biostatistics PhD Graduate Program
7136 Parran Hall
130 DeSoto Street
Pittsburgh, PA 15261
412-624-3053
wahed@pitt.edu

MS & MPH Programs
Ada O. Youk, PhD
Director, Biostatistics MS & MPH Graduate Programs
7129 Parran Hall
130 DeSoto Street
Pittsburgh, PA 15261
412-624-5451
ayouk@pitt.edu

Faculty & Administration
Admissions

In addition to the school-wide admission requirements, admission to all Biostatistics degree programs requires two semesters of calculus, a course in biology, and a basic computing course. In some cases, course deficiencies can be satisfied the first term. The MPH degree also requires 6 credits in biology, 6 credits in social science and a professional degree and/or background in health.

Applying for Admission to Pitt Public Health

Early Admission

University of Pittsburgh undergraduates may apply for early admission to the Biostatistics MS Program. Students must have completed the number of undergraduate credits required by their school before they can become a Biostatistics MS student.

3+2 Accelerated Master's Program

3+2 Accelerated Master's Program Admission Requirements

Financial Aid

The Department of Biostatistics provides full financial aid for approximately 55 PhD students per year. The most common form of financial aid is as a graduate student researcher (GSR). A GSR is expected to work on one of the many funded research projects maintained by either the Department of Biostatistics or their collaborators in other departments. Currently the stipend is $1975.00 per month and includes a tuition waiver and medical benefits. A limited number of Teaching Assistantships (TA) are also available. The current stipend for a TA is $2238.00 per month and includes a tuition waiver. To be eligible for a TA position, a first year student must pass the oral English competency exam given by the University of Pittsburgh.

The department does not provide funding for MS or MPH students except in rare circumstances. Many MS/MPH students obtain jobs in the University or surrounding area performing data analysis and other statistical tasks. The department circulates job advertisements when available to all students.

Tuition and Billing

Tuition & Financial Aid

Advanced Standing and Credit Transfer

Acceptance of a maximum of 12 credits taken as a non-degree student at Pitt Public Health is at the discretion of the department and program.

Students enrolled at Pitt Public Health may take credits in another school or institution, providing that their department has approved application of those credits to the degree requirements. In all cases, any combination of advanced standing credits and credits taken from another school or institution during enrollment at Pitt Public Health may not exceed the limits established by the University or the Regulations Governing Graduate Study at the University of Pittsburgh.

Students with previous graduate experience in Biostatistics or a related field may apply to transfer credits for graduate-level coursework successfully completed with a grade of B or better. PhD Students may apply to transfer up to 24 credits, MS students 6 credits, and MPH students 12 credits. The course credits to be transferred must be reviewed by the student's academic advisor and approved by the Department Chair and Assistant Dean for Student Affairs. Students who receive transfer credits for GSPH Core Courses must complete the GSPH Core Course Exemption Form in addition to the credit transfer paperwork to exempt out of those classes. Students who receive transfer credits for BOST 2087 must complete the BOST Course

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Exemption Form in addition to the credit transfer paperwork to exempt out of those classes. All transfer credit paperwork must be complete by the end of a student's first term.

**Biostatistics, PhD**

The PhD in Biostatistics degree program is for students with a background in mathematics and a strong interest in biology and public health. The program emphasizes statistical theory and methods so that students are prepared to be effective statistical collaborators in interdisciplinary studies; lead the design and execution of studies; and develop biostatistics methodology.

**Program Objectives**

Students successfully completing the PhD Program in Biostatistics will be able to:

- Quantitatively address a novel or complex health problem by developing an innovative statistical methodology or adapting existing methods to a new problem
- Demonstrate mastery of advanced statistical theory and applications
- Understand and implement innovative statistical approaches emerging in the literature to biomedical and public health issues
- Communicate the results of biostatistical analyses to individuals with varying degrees of statistical knowledge
- Recognize strengths and weaknesses of proposed approaches, including alternative designs, data sources, and analytic methods
- Determine the data best suited to address public health issues, program planning, and program evaluation
- Contribute to the body of knowledge in the field of biostatistics by submitting an article for publication in peer-reviewed journal, or preparing a book chapter or book for publication

**General Requirements for Doctoral Degrees**

For an overview of University-wide regulations for doctoral students, see Regulations Pertaining to Doctoral Degrees.

**Requirements**

**Coursework**

A minimum total of 72 credits are required.

PhD candidates normally complete graduation requirements in four to five years.

**Core Courses**

- BIOST 2025 - BIOSTATISTICS SEMINAR (3 terms required)
- BIOST 2039 - BIOSTATISTICAL METHODS
- BIOST 2043 - INTRODUCTION TO STATISTICAL THEORY 1
- BIOST 2044 - INTRODUCTION TO STATISTICAL THEORY 2
- BIOST 2049 - APPLIED REGRESSION ANALYSIS
- BIOST 2050 - LONGITUDINAL AND CLUSTERED DATA ANALYSIS
- BIOST 2051 - STATISTICAL ESTIMATION THEORY
- BIOST 2054 - SURVIVAL ANALYSIS
- BIOST 2061 - LIKELIHOOD THEORY AND APPLICATION
- BIOST 2083 - LINEAR MODELS
- BIOST 2086 - APPLIED MIXED MODELS ANALYSIS
- BIOST 2087 - BIOSTATISTICS CONSULTING PRACTICUM
Note:

*Pitt Public Health Core Courses

Electives

In situations where a student's special interests or needs indicate an alternative course is more appropriate it may be substituted with the permission of the student's academic advisor and department chair.

Department Electives

Students must complete six Biostatistics elective courses. Current electives are:

- BIOST 2016 - SAMPLING DESIGN AND ANALYSIS
- BIOST 2040 - ELEMENTS OF STOCHASTIC PROCESSES
- BIOST 2052 - MULTIVARIATE ANALYSIS
- BIOST 2055 - INTRODUCTORY HIGH-THROUGHPUT GENOMIC DATA ANALYSIS I: DATA MINING AND APPLICATIONS
- BIOST 2056 - INTRODUCTION TO DIAGNOSTIC TEST EVALUATION AND ROC ANALYSIS
- BIOST 2058 - SCIENTIFIC COMMUNICATION SKILLS
- BIOST 2062 - CLINICAL TRIALS: METHODS AND PRACTICE
- BIOST 2065 - ANALYSIS OF INCOMPLETE DATA
- BIOST 2078 - STATISTICAL LEARNING IN HIGH-DIMENSIONAL DATA WITH OMICS APPLICATIONS
- BIOST 2094 - ADVANCED R COMPUTING
- BIOST 2096 - NUMERICAL METHODS BIOSTATISTICS

Outside Electives

Students must complete at least three credits outside of the Department of Biostatistics.

Dissertation Research Credits

Students must complete three credits of BIOST 3010 or one term of FTDR 3999. Please see guidelines for both courses below.

Independent Study (BIOST 2021/3010) Guidelines

It is recommended that students should give priority to completing core and elective coursework before registering for independent study (BIOST 2021/BIOST 3010). Specifically, no more than 3 credits of independent study (BIOST 2021/BIOST 3010) should be taken in terms when core and elective courses are offered that a student needs take to complete coursework requirements.

Before passing the dissertation overview and comprehensive examination, a doctoral student can register for BOST 2021 for his/her independent PhD level research. After passing the dissertation overview and comprehensive examination, a student is permitted to take BOST 3010 which can fulfill the dissertation research credit requirement while providing credits toward the 72 credit requirement for the PhD degree.

In situations where a student's special interests or needs indicate more credits of independent study (BIOST 2021/BIOST 3010) appropriate approval must be obtained from the student's academic advisor and department chair.

FTDR 3999 Guidelines
Upon enrollment in 72 credits and successful completion of all required coursework, PhD students are required to register for Full-time Dissertation Study (FTDR 3999). FTDR 3999 carries no credits or letter grade, but provides students with fulltime status. Students enrolled in FTDR 3999 are assessed a special tuition fee.

**Preliminary (Qualifying) Examination**

The preliminary examination is designed to assess the breadth of the student's knowledge of the discipline, the student's achievement during the first year(s) of graduate study, and the potential to apply research methods independently. The preliminary examination is used to identify those students who may be expected to complete the doctoral program successfully and also to reveal areas for improvement in the student's preparation.

The Biostatistics PhD preliminary examination is typically offered annually in June. The examination consists of three separate components: applications, theory, and public health based on epidemiology. In order to pass the preliminary examination, students must receive passing scores for all three components of the examination. Eligible students are permitted to retake the portions of the examination they did not pass when the examination is offered again the following year. Students who do not pass the examination on the second attempt will be released from the PhD Program in accordance with the Pitt Public Health Probation and Dismissal Guidelines.

Once a student passes the preliminary examination, the student may begin working on his/her dissertation. Students should not begin dissertation work before they pass the preliminary examination.

**Eligibility**

A student is eligible to take the preliminary examination if the student:

- is enrolled in the Department of Biostatistics PhD Program with good standing (3.00 QPA or greater)
- did not fail the preliminary examination more than once; and
- completed the required courses (listed below) with a B or better, or equivalent coursework which the student has obtained transfer credits or exemption for

**Required Coursework**

**Application**

(Part 1 of 3)

- BIOST 2039 - BIOSTATISTICAL METHODS
- BIOST 2049 - APPLIED REGRESSION ANALYSIS
- BIOST 2050 - LONGITUDINAL AND CLUSTERED DATA ANALYSIS
- BIOST 2086 - APPLIED MIXED MODELS ANALYSIS

**Theory**

(Part 2 of 3)

- BIOST 2043 - INTRODUCTION TO STATISTICAL THEORY 1
- BIOST 2044 - INTRODUCTION TO STATISTICAL THEORY 2
- BIOST 2051 - STATISTICAL ESTIMATION THEORY
- BIOST 2061 - LIKELIHOOD THEORY AND APPLICATION
- BIOST 2083 - LINEAR MODELS

**Public Health**

(Part 3 of 3)
Doctoral Dissertation

Students must write a dissertation that presents the results of a research project carried out by the student. An appropriate research project involves a substantive piece of original and independent research grounded in an appropriate body of literature. The PhD dissertation should consist of material sufficient for at least two publications in peer-reviewed journals. At least one of the manuscripts, based on the dissertation and first authored by the student, must be submitted before the PhD dissertation defense. For PhD students matriculated prior to fall 2015, it is recommended that at least one of the manuscripts be submitted before the PhD dissertation defense. It is the responsibility of the student's dissertation committee to evaluate the dissertation in these terms and to recommend the awarding of the doctoral degree only if the dissertation is judged to demonstrate these qualities.

Before the student's dissertation overview and comprehensive examination, the student's dissertation advisor proposes for the approval of the Department Chair and Assistant Dean for Student Affairs, a doctoral dissertation committee.

Dissertation Overview & Comprehensive Examination

Doctoral students must prepare and present a dissertation proposal. The dissertation proposal consists of two parts: (i) a presentation of a dissertation overview to members of the student's doctoral committee and all interested members of the Department of Biostatistics and (ii) a comprehensive examination attended only by the student and his/her doctoral committee. The purposes of the overview and the comprehensive exam are for a student to demonstrate that he/she is prepared to complete a dissertation by showing a general breadth of biostatistical knowledge and deep understanding of particular area(s) of biostatistics, demonstrating the ability to use biostatistical research methods and presenting a carefully formulated plan of novel dissertation research. An announcement advertising the time and location of the dissertation overview should be disseminated to the Department at least one week prior to the presentation. The doctoral committee must unanimously approve the dissertation topic and research plan before the student is admitted to candidacy for the doctoral degree. Approval of the overview does not imply either the acceptance of a dissertation prepared in accord with the overview or the restriction of the dissertation to its original overview. The dissertation overview and comprehensive examination should be passed at least one academic term before scheduling the dissertation defense.

Admission to Candidacy

Admission to candidacy for a doctoral degree constitutes a promotion of the student to the most advanced stage of graduate study and provides formal approval to devote essentially exclusive attention to the research and the writing of the dissertation.

Eligibility

To qualify for admission to candidacy a student must:

- be in full graduate status
- have satisfied the requirement of preliminary examination
- have completed all required coursework with a minimum quality point average (QPA) of 3.00
- shown proficiency in a research or investigative tool
- have received approval of the proposed dissertation subject and plan following successful completion of the dissertation overview and comprehensive examination requirements

Students are informed of admission to candidacy by written notification from the Assistant Dean for Student Affairs.

Admission to candidacy should occur at least one academic term before the defense of the dissertation in order to provide an opportunity for the dissertation committee members to review, criticize, and monitor the proposed research.

Meetings of the dissertation committee and student must occur at least annually from the time the student gains admission to doctoral candidacy. During these meetings, the dissertation committee should assess the student's progress toward the completion of degree requirements and discuss objectives for the following year and a timetable for completing degree requirements.

Doctoral Dissertation Defense
The final oral examination in defense of the doctoral dissertation is conducted by the student's dissertation committee. One copy of the dissertation must be submitted to each member of the dissertation committee at least two weeks before the scheduled doctoral defense. The defense may not be scheduled earlier than two weeks following submission of the dissertation, but must be held at least two weeks before the degree is conferred.

At least one month before the scheduled defense, the student must provide the department registrar with the defense time, date, place, dissertation title and abstract for school-wide advertisement. The student must also provide these details to the University Times and Pitt Chronicle for advertisement at least one month before the scheduled defense.

The final copy of the dissertation must be prepared and submitted according to University Guidelines for Electronic Theses and Dissertations (ETD). Detailed dissertation rules can be found in the Pitt Public Health Handbook.

Graduation

All PhD students must register for at least one credit or FTDR 3999 during the term in which they intend to graduate.

Biostatistics, MS

The MS in biostatistics degree program is for students with a background in mathematics and a strong interest in biology and public health. The program emphasizes statistical theory and methods so that students are prepared to be effective statistical collaborators in interdisciplinary studies; and lead the design and execution of studies.

Program Objectives

Students successfully completing the MS Program in Biostatistics will be able to:

- Address health problems by appropriate problem definition, study design, data collection, data management, statistical analysis, and interpretation of results
- Demonstrate mastery of the theory underlying statistical methods
- Understand and implement innovative statistical approaches
- Communicate biostatistical analyses to individuals with varying degrees of statistical knowledge
- Apply research design principles to problems in public health
- Recognize strengths and weaknesses of approaches, including alternative designs, data sources, and analytic methods
- Determine the data best suited to address public health issues, program planning, and program evaluation

General Requirements for Master's Degrees

For an overview of University-wide regulations for master's students, see Regulations Pertaining to Master's Degrees.

Requirements

Coursework

A minimum of 40 credits are required.

Full-time students normally complete graduation requirements for the MS degree within three to five terms (18 to 24 months).

Core Courses

- BIOST 2021 - SPECIAL STUDIES (2 credits required)
- BIOST 2025 - BIOSTATISTICS SEMINAR
Electives

Students must complete Biostatistics elective credits to bring the total number of course credits to 40. In situations where a student's special interests or needs indicate an alternative, non-Biostatistics, course is more appropriate it may be substituted with the permission of the student's academic advisor and department chair.

Master's Comprehensive Examination

MS students must pass a written comprehensive examination that is given annually at the end of the first year of study in early May. The MS comprehensive examination consists of two short answer components: one for theory and one for applied methods. The examination is a proctored closed book exam.

Eligible students who fail the examination on the first attempt will be permitted to take the examination a second time during the summer. The summer examination is only for eligible first-year students who did not pass the examination on the first attempt in order not to delay graduation or decisions about continuation in the program. Eligible students who fail the examination on the first attempt may also choose to wait until the following May to retake the exam. Students who do not pass the examination on the second attempt will be released from the MS Program in accordance with the Pitt Public Health Probation and Dismissal Guidelines.

Once a student passes the preliminary examination, the student may begin working on his/her thesis. Students should not begin thesis work before they pass the comprehensive examination.

Eligibility

A student is eligible to take the comprehensive examination if the student:

- is enrolled in the Department of Biostatistics MS Program with good standing (3.00 QPA or greater)
- did not fail the comprehensive examination more than once
- completed the required courses (listed below) with a B or better, or equivalent coursework which the student has obtained transfer credits or exemption for

Required Coursework

- BOST 2039 - BIOSTATISTICAL METHODS
- BOST 2043 - INTRODUCTION TO STATISTICAL THEORY 1
- BOST 2044 - INTRODUCTION TO STATISTICAL THEORY 2
- BOST 2049 - APPLIED REGRESSION ANALYSIS
Master's Thesis

MS students can begin work on his/her thesis only after successful completion of the MS Comprehensive Examination requirement. MS students must register for a minimum of two Special Studies (BIOST 2021) credits (these credits DO NOT count toward the elective credit requirement) and meet the master's thesis requirement.

MS students are required to write and defend a master's thesis. The master's thesis must be in accord with specifications stipulated in the Format Instructions for Pitt Public Health Essays, Thesis, and Dissertations.

Before the student's thesis defense, the student's thesis advisor proposes for the approval of the Department Chair and Assistant Dean for Student Affairs, a master's thesis committee.

The MS thesis committee will judge the adequacy of the MS thesis by an open oral examination covering the subject of the thesis. Successful completion of the MS thesis requires unanimous agreement by the MS thesis committee.

While not required, it is highly recommended that the student hold a proposal meeting with his/her committee shortly after starting the thesis work. The purpose of this meeting would be to discuss the topic and scope of the thesis project and to allow the committee to be familiar with the student's work prior to the defense. It is highly recommended that all students follow the format instructions for Pitt Public Health essays, theses, and dissertations and work in the ETD template when they start to write their thesis.

All students who plan to graduate in a certain term MUST check the Pitt Public Health graduation page at the beginning of that term. This page lists the deadlines for graduation requirements including thesis formatting checks and upload deadlines. The defense MUST be scheduled no later than one week prior to the formal upload deadline for the thesis ETD document. The defense will not be schedule with less than one week before the deadline. In accordance with the Pitt Public Health School-Wide MPH Essay/Thesis Completion Policy, a complete final draft of the thesis MUST be submitted to the committee no later than two weeks prior to the date of the defense. If less than two weeks are given, the committee will cancel the thesis defense and graduation will be delayed.

The MS thesis committee will judge the adequacy of the MS thesis by an open oral examination covering the subject of the thesis. Successful completion of the MS thesis requires unanimous agreement by the MS thesis committee.

The final copy of the thesis must be prepared and submitted according to University Guidelines for Electronic Theses and Dissertations (ETD).

Graduation

All MS students must register for at least one credit during the term in which they intend to graduate.

Department of Behavioral and Community Health Sciences

The Department of Behavioral and Community Health Sciences at the University of Pittsburgh examines the social determinants of health, that is, the set of social and behavioral factors that either promote or threaten public health. Our interventions alter these social and behavioral factors (such as housing, health literacy, or care management) to assess effects on community health. The BCHS mission statement summarizes our approach:

VISION

Healthy people living in thriving and equitable communities.

MISSION

Improve and promote health and equity by engaging individuals, communities, and systems through our research, teaching, and practice.

VALUES

Open communication; active collaboration; integrated and strength-based approaches; social justice and health equity; application of knowledge in the context of people's lives.
The primary educational mission of the Department is to prepare students for positions of responsibility and leadership in public health practice, research, and training. Our students learn to employ the most current health behavior theories and community development strategies in approaching public health challenges. They develop applied research skills in community health assessment and planning, program implementation and evaluation, health education, and health communication. They learn how to design programs and conduct community-based research, and to work as part of interdisciplinary teams examining behavioral interventions and community assessment strategies. These educational and practice experiences prepare our graduates to move into leadership positions at the local, national, and international levels.

The department has a world-class faculty that is involved in teaching, research, and community service on the local, national, and international level. We collaborate with local and regional public health systems, and many of the leadership staff in these organizations also have faculty appointments and teach classes in the department.

**Contact Information**

Steve Albert, PhD  
6129 Parran Hall  
412-383-8693  
E-mail: smalbert@pitt.edu  
www.bchs.pitt.edu

For additional information concerning specific degrees, contact the following: MPH-Martha Ann Terry, 6137 Parran Hall, 412-624-5887 or materry@pitt.edu; MPH/PhD in Social Work and MPH/MSW in Social Work-Steven Albert, 6129 Parran Hall, 412-383-8693 or smalbert@pitt.edu; PhD and DrPH-Jeanette Trauth, 6138 Parran Hall, 412-624-0968 or trauth@pitt.edu; Admission and Registration, 412-624-3107.

**Admission: All Applicants**

Applications for admission to the Department of Behavioral and Community Health Sciences are processed through the Office of Student Affairs at Pitt Public Health. You must apply for the MPH, PhD, and DrPH programs through SOPHAS, the centralized application service for graduate schools of public health.

Please review the Pitt Public Health requirements for admission before applying.

Application instructions differ depending on whether you are applying for a degree, a certificate, or for non-degree coursework. Please follow the application instructions for your plan of study when applying to Pitt Public Health.

**Department requirements- BCHS doctoral applicants:**

- PhD applicants: a master's degree in a discipline relevant to public health is required.
- DrPH applicants: A MPH degree is required.
- A minimum grade point average of 3.3.
- Official GRE scores from a test taken within three years of the application date. Scores in the 60th percentile or higher are highly desirable.
- Completed 3 credits of college math passed with a C or better

**Department requirements- BCHS MPH applicants:**

- At least a 3.0 GPA on a 4.0 scale
- 153 (60%) verbal GRE, 148 (31%) quantitative GRE and 4.5 (82%) analytic writing
- Completed 3 credits of college math passed with a C or better
- Completed 6 credits of social sciences passed with a C or better

The BCHS department requires a minimum TOEFL score of 100 on the IBT or a minimum IELTS score of Band 7.0, if applicable. TOEFL or IELTS must be taken within two years of application.

**Financial Assistance**

Although resources for master's students are limited, the program makes every effort to assist students in accessing some level of financial aid. Small grants and awards are available from the Department, the Graduate School of Public Health, and from the University, and many BCHS students have
been successful in competing for these awards. In addition, a small number of Graduate Student Assistant and Graduate Student Researcher positions are available for full-time doctoral students. There are also opportunities for paid field practicum positions, and many students are able to supplement their income through part-time employment on public health-related service or research projects conducted within the Graduate School, the University, or in the community.

**Graduate Programs**

Educational programs of the Department of Behavioral and Community Health Sciences build upon a common body of public health knowledge and social/behavioral science concepts, theories and applied research methods. The Master of Public Health (MPH) Program prepares students to assess the health status and needs of populations, develop public health interventions, and evaluate these interventions as well as develop recommendations for improvement. Students learn and put into practice assessment and research skills in the context of social and behavioral change at the individual, organizational, and community levels with an emphasis on social ecology and social justice. Three joint degree options are also available. Two programs with the School of Social Work, the MPH/PhD and the MPH/MSW in Public Health Social Work, train social workers for leadership positions in public health systems and prepare them for research and teaching posts. Students also have the option to receive the MPH and the Master of Public Administration (MPA), the Master of Public and International Affairs (MPIA), or the Master of International Development (MID) through a joint program with the Graduate School of Public and International Affairs. Finally, students can earn an MPH and a PhD in anthropology in cooperation with the Dietrich School of Arts and Sciences. The Department offers two doctoral degrees: a PhD (doctor of philosophy) and DrPH (doctor of public health). See Doctoral Programs section below for description.

**Research Focus**

The Department of Behavioral and Community Health Sciences has an extensive array of funded research and training projects. BCHS faculty and staff are skilled in the use of both quantitative and qualitative research methods, and the Department is particularly well known for its community-based participatory research strategies and modeling-simulation efforts designed to improve the health and welfare of communities.

Areas of research strengths include:

- Diabetes and Chronic Disease Prevention
- Cancer Screening Behavior
- Health Equity
- Public Health and Aging
- HIV/AIDS and Sexually Transmitted Diseases
- Maternal and Child Health
- Evaluation Science
- Global Health
- Modeling of health behavior and linked disease dynamics
- Mental Health

Research and training projects are funded by organizations such as:

- National Institutes of Health (NIH)
- Centers for Disease Control and Prevention (CDC)
- National Cancer Institute (NCI)
- National Institute on Aging (NIA)
- National Institute of Nursing (NINR)
- Health Resources and Services Administration, U.S. Department of Health & Human Services (HRSA)
- Pennsylvania Department of Health
- Local and National Philanthropic Organizations

**Doctoral Programs**

The Doctor of Philosophy (PhD) Program prepares students to conduct research in the social and behavioral sciences areas of public health in a variety of settings as well as teach in academic settings. The PhD curriculum is formed by a social-ecological perspective regarding the determinants of health and opportunities for intervention. Within this overarching framework, the curriculum also emphasizes theory-driven research, addressing
health issues across the developmental life span of populations, examining variation across socio-demographic categories such as gender, age, and sociocultural status as it affects health and health disparities. The curriculum addresses the following areas: individual behavior, population health, research design and methods, statistical analysis; behavioral interventions; and the integration of public health research and practice. The PhD Program is a 72 credit program designed to be completed in 2 years full-time coursework in addition to 2 years for completion of dissertation research.

The Doctor of Public Health (DrPH) Program trains individuals for positions of senior responsibility and leadership in public health practice settings. Students develop skill in the seven core areas identified by the Association of Schools of Public Health for DrPH degree programs. This includes coursework and practical experience in the following areas: 1) theory and research methods that facilitate critical analysis, 2) community orientation, 3) communication, 4) management, 5) leadership, 6) advocacy and 7) professionalism and ethics. These skills position students to assume leadership positions in public health agencies, health departments, nongovernmental organizations, foundations, and agencies in the human services sector. The DrPH Program is a 72 credit program designed to be completed in 2 years full-time coursework in addition to 2 years for completion of dissertation research.

Master's Degree

The MPH Program is a 45-credit program requiring students to complete the Pitt Public Health core courses (18-19 credits), the departmental core courses (17-18 credits), and elective courses. The departmental core courses cover social/behavioral theory and concepts; applied social/behavioral research methods; program planning, implementation and evaluation; health communication; community development approaches and experience in applying social/behavioral theories and methods through the completion of a 200 hour practicum/internship. School core courses include Biostatistics, Epidemiology, Public Health Biology, Environmental and Occupational Health, Health Policy and Management, and Capstone.

Electives are selected from a range of approved courses that pertain to a student's area of concentration or interest. Students are required to complete a practicum in a public health setting and prepare an essay or thesis that addresses an issue of public health significance and that demonstrates the ability to synthesize information from numerous sources. The MPH program is designed to be completed in four semesters of full-time study. An option does exist for finishing in three semesters.

A number of joint degrees programs are also offered. See joint degree information below.

Joint Degrees

Students in the BCHS MPH program can pursue two graduate degrees simultaneously, through partnerships with other schools and departments at the University of Pittsburgh. Joint programs typically reduce the number of credits needed for each degree, allowing students to earn two degrees in three years for master's programs and four to five years for MPH/PhD programs.

To participate in a joint degree program, students apply separately to both schools, and must meet all of the usual admissions requirements (including entrance exams like the GRE). If admitted to both schools, students alternate their primary program of study by semester or by year.

Although it is possible to apply to both schools at the same time, currently enrolled students can still apply for a joint degree as long as they have not yet completed one year of full-time study.

Certificates/Specialized Study

The Department of Behavioral and Community Health Sciences offers opportunities for certificates or specialized study in the following areas:

- Lesbian, Gay, Bisexual, and Transgender Health and Wellness
- Health Equity
- Evaluation of Public Health Programs
- Community-Based Participatory Research and Practice (CBPRP)

Behavioral and Community Health Sciences, DrPH
The Doctor of Public Health (DrPH) Program trains individuals for positions of senior responsibility and leadership in public health practice settings. Students develop skill in the seven core areas identified by the Association of Schools of Public Health for DrPH degree programs. This includes coursework and practical experience in the following areas: 1) theory and research methods that facilitate critical analysis, 2) community orientation, 3) communication, 4) management, 5) leadership, 6) advocacy and 7) professionalism and ethics. These skills position students to assume leadership positions in public health agencies, health departments, nongovernmental organizations, foundations, and agencies in the human services sector.

The minimum-credit requirement for the DrPH Program is 72 credits of completed coursework and independent research. Twenty-four credits may be awarded for a previously earned master's degree. Twelve (transfer or advance standing) credits may be allowed for graduate work taken after earning the master's degree. All students must complete a common core of courses in the following categories:

- Community/Cultural Orientation in Public Health (6 credits)
- Critical Analysis (24 credits)
- Communication (3 credits)
- Management (3 credits)
- Integration of Research and Public Health Practice (3-8 credits)
- Competency area elective
- A minimum of 1 dissertation credit must be earned.

An important element of the DrPH degree is the Executive Management Practicum, which requires that students work in a setting where they will have an opportunity to develop and refine skills in leadership, advocacy and ethics. While doing so, students will also have opportunities to apply content from coursework in the other competency areas: community/cultural orientation, critical analysis, communication and management. The DrPH Program is designed to be completed in 2 years full-time coursework in addition to 2 years for completion of dissertation research.

BCHS DrPH Requirements

Community/Cultural Orientation (6 credits)

- BCHS 2554 - INTRODUCTION TO COMMUNITY HEALTH
- Advanced Methods in CBPR series
- BCHS 2608 - INTRODUCTION TO COMMUNITY BASED PARTICIPATORY RESEARCH
- BCHS 2609 - TRANSLATING RESEARCH FOR POLICY AND PRACTICE
- BCHS 2610 - CONCEPT MAPPING: A PARTICIPATORY RESEARCH METHOD

Critical Analysis (24 credits)

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1 or
- PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2 or
- PSYED 2019 - STATISTICS 2: ANALYSIS OF VARIANCE
- BIOST 2049 - APPLIED REGRESSION ANALYSIS or
- PSYED 2410 - APPLIED REGRESSION ANALYSIS
- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH
- BCHS 2558 - HEALTH PROGRAM EVALUATION
- BCHS 3003 - SEMINAR IN ADVANCED EVALUATION TECHNIQUES
- BCHS 3007 - ETHNOGRAPHIC AND QUALITATIVE METHODS
- BCHS 3555 - DOCTORAL SEMINAR IN BEHAVIORAL AND COMMUNITY HEALTH SCIENCES THEORIES AND MODELS

Communication (3 credits)

- BCHS 3504 - DOCTORAL SEMINAR ON HEALTH COMMUNICATIONS
Management (3 credits)

- HPM 2081 - PUBLIC HEALTH AGENCY MANAGEMENT

Integration of Public Health Research and Practice (3-8 credits)

- BCHS 3503 - PREVENTION SCIENCE: TRANSLATING KNOWLEDGE TO PRACTICE
- BCHS 3004 - INTEGRATIVE RESEARCH SEMINAR: GRANT WRITING
  *Students enroll in two semesters of BCHS 3004.
- BCHS 3703 - EXECUTIVE MANAGEMENT PRACTICUM
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS

Competency Area Elective (choose one out of three courses below)

Leadership

- BCHS 2135 - LEADERSHIP or
- ADMPS 2128 - LEADERSHIP or
- PIA 2131 - LEADERSHIP

Advocacy

- HPM 2063 - THE POLITICS OF HEALTH POLICY

Professionalism and Ethics

- HPM 2131 - PUBLIC HEALTH LAW AND ETHICS

Electives

Milestones (0-4 credits)

- BCHS 3888 - PREPARATION FOR COMPREHENSIVE EXAMINATION

- FTDR 3999 - FULL-TIME DISSERTATION STUDY or
- BCHS 3010 - RESEARCH AND DISSERTATION PHD

Additional Requirements

Both DrPH and PhD students take a preliminary (qualifying) examination at the end of the first year of full-time course work and a comprehensive examination when the student has completed all of the required course work. Following successful completion of the dissertation overview, the student is admitted into candidacy and begins dissertation study under the direction of a dissertation committee. The dissertation and oral defense of the dissertation must be completed within five years of the comprehensive examination. See General Requirements for Doctoral Degrees for further information.

Behavioral and Community Health Sciences, PhD
The Doctor of Philosophy (PhD) Program prepares students to conduct research in the social and behavioral sciences areas of public health in a variety of settings as well as teach in academic settings. The PhD curriculum is formed by a social-ecological perspective regarding the determinants of health and opportunities for intervention. Within this overarching framework, the curriculum also emphasizes theory-driven research, addressing health issues across the developmental life span of populations, examining variation across socio-demographic categories such as gender, age, and sociocultural status as it affects health and health disparities. The curriculum addresses the following areas: individual behavior, population health, research design and methods, statistical analysis; behavioral interventions; and the integration of public health research and practice.

The minimum credit requirement for the PhD program is 72 credits of completed course work and independent research. Twenty-four credits may be awarded for a previously earned master's degree. Twelve (transfer or advance standing) credits may be allowed for graduate work taken after earning the master's degree. All students must complete a common core of courses in the following categories:

- Theories of behavior and community (6 credits)
- Research design and methods (11 credits)
- Elective theory and methods (3 credits)
- Statistical analysis (12 credits)
- Interventions (6 credits)
- Integration of public health research and practice (3-8 credits)
- Milestones (0-4 credits)

PhD students will typically earn 3 credits preparing for their comprehensive exam and a minimum of 1 dissertation credit must be earned. All PhD students must be enrolled as a full-time student at least 1 semester during their program. Registration for FTDR (i.e. Full-time Dissertation Research) after completion of 48 credits of coursework will fulfill this requirement. The program is designed to be completed in 2 years full-time coursework in addition to 2 years for completion of dissertation research.

**BCHS PhD Requirements**

**Behavior & Community (6 credits)**
- BCHS 2554 - INTRODUCTION TO COMMUNITY HEALTH
- BCHS 3555 - DOCTORAL SEMINAR IN BEHAVIORAL AND COMMUNITY HEALTH SCIENCES THEORIES AND MODELS

**Research Design & Methods (11 credits)**
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH
- BCHS 3007 - ETHNOGRAPHIC AND QUALITATIVE METHODS
- BCHS 3030 - MEASUREMENT IN THE SOCIAL AND BEHAVIORAL SCIENCES

**Elective: Theory & Methods Examples (Choose any 3 credit graduate course at Pitt)**
- BCHS 3002 - HEALTH SURVEY METHODS
- BCHS 3003 - SEMINAR IN ADVANCED EVALUATION TECHNIQUES
- BCHS 3504 - DOCTORAL SEMINAR ON HEALTH COMMUNICATIONS
- Advanced Methods in CBPR series
- BCHS 2608 - INTRODUCTION TO COMMUNITY BASED PARTICIPATORY RESEARCH
- BCHS 2609 - TRANSLATING RESEARCH FOR POLICY AND PRACTICE
- BCHS 2610 - CONCEPT MAPPING: A PARTICIPATORY RESEARCH METHOD
- BCHS 2991 - MULTILEVEL ANALYSIS IN PUBLIC HEALTH
- TBD: Students may choose any graduate course at the University - 3 credits

**Statistical Analysis (12 credits)**
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1 or
• PSYED 2018 - STATISTICS 1: DESCRIPTIVE AND INFERENTIAL STATISTICS
• BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2 or
  • PSYED 2019 - STATISTICS 2: ANALYSIS OF VARIANCE
• BIOST 2049 - APPLIED REGRESSION ANALYSIS or
  • PSYED 2410 - APPLIED REGRESSION ANALYSIS
• BCHS 3707 - APPLIED MULTIPLE REGRESSION ANALYSIS AND CAUSAL MODELING FOR THE BEHAVIORAL AND COMMUNITY HEALTH SCI

Interventions (6 credits)
• BCHS 2558 - HEALTH PROGRAM EVALUATION
• BCHS 3503 - PREVENTION SCIENCE: TRANSLATING KNOWLEDGE TO PRACTICE

Integration of Public Health Research and Practice (3-8 credits)
• BCHS 3004 - INTEGRATIVE RESEARCH SEMINAR: GRANT WRITING
* Students enroll in two semesters of BCHS 3004.
• PUBHILT 2011 - ESSENTIALS OF PUBLIC HEALTH (required if no MPH)
• PUBHILT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
• FACDEV 2200 - PRACTICUM ON UNIVERSITY TEACHING or
• BCHS 2511 - INDEPENDENT STUDY + 5 CIDDE Workshops
• Research Competency Requirement

Electives

Milestones (0-4 credits)
• BCHS 3888 - PREPARATION FOR COMPREHENSIVE EXAMINATION

• FTDR 3999 - FULL-TIME DISSERTATION STUDY or
• BCHS 3010 - RESEARCH AND DISSERTATION PHD

Additional Requirements

Both DrPH and PhD students take a preliminary (qualifying) examination at the end of the first year of full-time course work and a comprehensive examination when the student has completed all of the required course work. Following successful completion of the dissertation overview, the student is admitted into candidacy and begins dissertation study under the direction of a dissertation committee. The dissertation and oral defense of the dissertation must be completed within five years of the comprehensive examination. See General Requirements for Doctoral Degrees for further information.

Behavioral and Community Health Sciences, MPH/MID; MPH/MPA; MPH/MPIA

The MPH/MID, MPH/MPA and MPH/MPIA joint degree programs prepare students for careers as public health practitioners in emerging economies where health issues are closely linked to social, political, and economic problems.
The MPH/MPA, MPH/MPIA and MPH/MID joint degree requirements are listed below. Students should refer to the Graduate School of Public and International Affairs page for the most current program checklists. The joint degree programs are designed to be completed in three years of full-time study.

- 78 credits, including coursework and one 300 contact hour field placement
- Foundational public health courses
- Advanced courses in health communications, program planning, and behavioral theories
- Advanced courses in public and international affairs; international development; or public administration
- Health-related field placement experiences
- Advanced thesis or essay research synthesizing public health core concepts with issues relevant to public and international affairs

GSPH Core Requirements

- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING or
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHLT 2016 - CAPSTONE COURSE: PROBLEM SOLVING IN PUBLIC HEALTH

BCHS MPH/MID; MPH/MPA; MPH/MPIA Core Requirements

- BCHS 2521 - ESSAY
- BCHS 2503 - PRACTICUM
- BCHS 2504 - OVERVIEW OF HEALTH COMMUNICATION
- BCHS 2520 - THEORIES OF HEALTH BEHAVIOR AND HEALTH EDUCATION
- BCHS 2523 - PUBLIC HEALTH PROGRAM PLANNING AND PROPOSAL WRITING
- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH
- BCHS 2554 - INTRODUCTION TO COMMUNITY HEALTH

Behavioral and Community Health Sciences, MPH/MSW

What is the MPH/MSW joint degree program?

The joint degree program is collaboration between the School of Social Work and the Graduate School of Public Health, Department of Behavioral and Community Health Sciences. Students graduate with both Master of Social Work and Master of Public Health degrees and are prepared to pursue a wide range of social work and public health careers to improve the health of a target population and/or community. Students participate in class work, field placements, and leadership seminars to acquire the knowledge and skills to address health problems.

What principles guide this program?

The program has a strong commitment to social justice, the elimination of health disparities, and a holistic definition of community and population health, including individuals' physical health conditions and the behavioral and social ecological determinants of health. Moreover, both social work and public health share a commitment to involving consumers/community members in the development of policies and in the planning, delivery and evaluation of health promotion interventions, health behavior change, and health education.

What are the advantages of the program?

- Students develop knowledge, values and skills for both professional social work practice and (e.g. direct practice or community organization/social administration) and community public health practice (e.g. primary, secondary, and tertiary prevention).
- Advising and mentoring focuses on supporting students to achieve their professional goals (e.g., selection of field placements, papers written as part of course-work, leadership training activities, focus of final thesis/essay in the MPH program).
Students increase their career marketability as a result of being able to work from a cross disciplinary perspective. Students have gone on to jobs, for example, in various social service organizations, health departments, other government agencies, academic institutions, think tanks, and the Centers for Disease Control and Prevention.

**What competencies will individuals gain as a result of the program?**

- Application of theoretical principles to primary, secondary, and tertiary health interventions targeting the promotion of health behavior change, enhancement of the environment, and the elimination of risk factors in neighborhoods and communities that contribute to disease and poor health status outcomes
- Application of principles of community-based participatory research and practice to community health assessment
- Application of quantitative and qualitative skills to program planning and evaluation research
- Processes involved in community health planning, program implementation, and program evaluation
- Written communication to inform the public, policymakers, and other key-stakeholders
- Other leadership skills in micro practice with individuals, families, and groups or macro practice.

All graduates also achieve the core and cross-cutting competencies for Pitt Public Health MPH students.

**What are the requirements of the program?**

The BCHS MPH/MSW joint degree typically is completed with a three-year curriculum plan for Direct Practice or COSA (2.5 years for advanced standing students). The BCHS MPH/MSW in Social Work requirements are listed below. Students should refer to the School of Social Work for the most current program checklist.

- 33 Social Work credits (plus 18 field placement credits)
- 36 Public Health credits

**Some highlights of the program are:**

- 18 field placement credits representing two separate field placement experiences, foundation and concentration, coordinated by the School of Social Work, Office of Field Education.
- Leadership Seminars for students participating in the Juanita C. Evans Fellowship Program
- Final essay or thesis

**What types of careers do graduates of the MSW/MPH joint degree program engage in?**

- Patient Services Managers
- Research Scientist
- Policy Advocates
- Program Directors
- Communication Directors
- Adjunct and part-time faculty in MSW and BSW degree programs
- Bridging the gap between the public's health and social work practice
- Program Planners

**Application Process**

Students must apply separately to the School of Social Work and the Graduate School of Public Health (GSPH).

**GSPH Core Requirements**

- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING or
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHLT 2016 - CAPSTONE COURSE: PROBLEM SOLVING IN PUBLIC HEALTH

**BCHS MPH/MSW Core Requirements**
Behavioral and Community Health Sciences, MPH/PhD, Anthropology

This joint degree program with the Department Anthropology in the Dietrich School of Arts and Sciences prepares anthropologists for research, teaching, and program planning/evaluation for specialization in the cultural, social, and behavioral aspects of health and health care in either a domestic or international setting.

Competencies

Graduates will be able to:

- Demonstrate ability to apply principles of community-based participatory research and practice to community health assessment
- Develop quantitative and qualitative skills that can be applied to program planning and evaluation
- Communicate in writing information to the public, stakeholders and policymakers
- Apply theory to program planning and evaluation

All graduates also achieve the core and cross-cutting competencies for Pitt Public Health MPH students.

The MPH/PhD joint degree requirements are listed below. Students should refer to the Department of Anthropology for the most current program checklist.

- 87 credits, including coursework, research and fieldwork
- Foundational public health courses
- Courses in health communication, program planning, methods, community development and behavioral theories
- Advanced courses in anthropology
- Advanced dissertation research that includes at least one year of fieldwork in an area of specialization

MPH students enrolled in the MPH/PhD program in anthropology fulfill the course work requirements for both BCHS and anthropology and earn both degrees for a total of 87 credits. The MPH essay/thesis requirement is met by the PhD dissertation. The practicum requirement is met through fieldwork. The joint degree program is designed to be completed in four to five years including time for dissertation research.

GSPH Core Requirements

- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING or
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHLT 2016 - CAPSTONE COURSE: PROBLEM SOLVING IN PUBLIC HEALTH

BCHS MPH/PhD Anthropology Core Requirements

- BCHS 2504 - OVERVIEW OF HEALTH COMMUNICATION
- BCHS 2520 - THEORIES OF HEALTH BEHAVIOR AND HEALTH EDUCATION
- BCHS 2523 - PUBLIC HEALTH PROGRAM PLANNING AND PROPOSAL WRITING
- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH
Behavioral and Community Health Sciences, MPH/PhD, Social Work

This joint program with the University of Pittsburgh School of Social Work prepares students to fulfill leadership roles in public health systems or academic settings. Students in this program, have opportunities to work with local organizations on a variety of planning, evaluation, and research activities.

Competencies

Graduates will be able to:

- Demonstrate ability to apply principles of community-based participatory research and practice to community health assessment
- Develop quantitative and qualitative skills that can be applied to program planning and evaluation
- Demonstrate process of planning, implementing, and evaluating programs and policies
- Communicate in writing information to the public, to stakeholders and to policymakers
- Apply theory to program planning and evaluation

All graduates also achieve the core and cross-cutting competencies for Pitt Public Health MPH students.

The BCHS MPH/PhD in Social Work requirements are listed below. Students should refer to the School of Social Work for the most current program checklist. The joint degree program is designed to be completed in four to five years including time for dissertation research.

Requirements

- 72 credits, including coursework and research
- Foundational public health courses
- Advanced courses in health communications, program planning, and behavioral theories
- Advanced courses in research methods and statistics
- Advanced dissertation research in an area of specialization

GSPH Core Requirements

- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING or BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHLT 2016 - CAPSTONE COURSE: PROBLEM SOLVING IN PUBLIC HEALTH

BCHS MPH/PhD Social Work Core Requirements

- BCHS 2521 - ESSAY
- BCHS 2503 - PRACTICUM or BCHS 2511 - INDEPENDENT STUDY
- BCHS 2504 - OVERVIEW OF HEALTH COMMUNICATION
- BCHS 2520 - THEORIES OF HEALTH BEHAVIOR AND HEALTH EDUCATION
- BCHS 2523 - PUBLIC HEALTH PROGRAM PLANNING AND PROPOSAL WRITING
- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH
- BCHS 2554 - INTRODUCTION TO COMMUNITY HEALTH

Behavioral and Community Health Sciences, MPH
The MPH Program is a 45-credit program requiring students to complete the Pitt Public Health core courses (18-19 credits), the departmental core courses (17-18 credits), and elective courses.

Electives are selected from a range of approved courses that pertain to a student's area of concentration or interest. Students are required to complete a practicum in a public health setting and prepare an essay or thesis that addresses an issue of public health significance and that demonstrates the ability to synthesize information from numerous sources. The MPH program is designed to be completed in four semesters of full-time study. An option does exist for finishing in three semesters.

BCHS-MPH Handbook

GSPH Core Requirements

Required coursework for the BCHS MPH degree

- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING or
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHLT 2016 - CAPSTONE COURSE: PROBLEM SOLVING IN PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS

BCHS MPH Core Requirements

- BCHS 2521 - ESSAY
- BCHS 2503 - PRACTICUM
- BCHS 2504 - OVERVIEW OF HEALTH COMMUNICATION
- BCHS 2520 - THEORIES OF HEALTH BEHAVIOR AND HEALTH EDUCATION
- BCHS 2523 - PUBLIC HEALTH PROGRAM PLANNING AND PROPOSAL WRITING
- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH
- BCHS 2554 - INTRODUCTION TO COMMUNITY HEALTH

Electives

Community-Based Participatory Research and Practice Certificate

In the past 10 years, Community-based Participatory Research and Practice (CBPRP) has emerged as a core discipline in behavioral and social science departments within schools of public health. CBPRP is a collaborative process of research and practice that includes both researchers and community representatives. Communities are generally defined as those that share a unit of identity (e.g., social ties, geographical locations). The CBPRP process involves engaging community members, using local knowledge in the understanding of health problems, and a long-term commitment to partnership. CBPRP is oriented towards holistic interventions informed by social ecology modeling, a widely recognized approach that not only targets knowledge, attitudes, and behaviors of individuals, but also includes social factors such as family and friendship ties, community norms, and the structure of community services.

Requirements for the Certificate
This program provides a comprehensive set of courses that will prepare students for a career in community-based participatory research and practice. As part of the program, student interns will work with local community agencies to collaboratively address identified community public health issues.

Applicants must meet the requirements for admission to the MPH program in the Department of Behavioral and Community Health Sciences and be accepted into the certificate program.

Students must complete 15 credits, including 9 credits of coursework and a six-credit internship/practicum. The certificate program is designed to be completed in four semesters of full-time study. An option does exist for finishing in three semesters.

Note: Some additional credits that do not apply to any degree or other certificate must be completed for each certificate program.

**Required Courses**

- BCHS 2554 - INTRODUCTION TO COMMUNITY HEALTH
- BCHS 2135 - LEADERSHIP
- BCHS 2608 - INTRODUCTION TO COMMUNITY BASED PARTICIPATORY RESEARCH
- BCHS 2609 - TRANSLATING RESEARCH FOR POLICY AND PRACTICE
- BCHS 2610 - CONCEPT MAPPING: A PARTICIPATORY RESEARCH METHOD
- BCHS 2503 - PRACTICUM

**Evaluation of Public Health Promotion and Health Education Programs Certificate**

Demand for comprehensive program evaluations is rising in a range of public and private organizations dealing with the health and social welfare needs of populations in the United States as well as worldwide. Graduates with a specialization in program evaluation in public health have expanded opportunities for employment in organizations such as health departments and ministries of health, health and hospital systems, educational programs, philanthropic foundations, and consulting firms. Students in the BCHS program evaluation certificate study under expert faculty and research staff. Students are trained in the application of both quantitative and qualitative methods for evaluation, and have the opportunity to participate directly on interdisciplinary evaluation teams on actual community-based projects. The evaluation concentration typically involves taking courses in basic and advanced evaluation methods, qualitative approaches, health survey methods, and the evaluation practicum.

**Requirements for the Certificate**

This program trains students to apply both quantitative and qualitative methods for interdisciplinary evaluation of a range of community-based public health projects.

Applicants must meet the requirements for admission to Pitt Public Health.

- Masters students must complete 15 graduate credits, including a 3-credit (400 hours) applied evaluation internship under the supervision of a designated faculty member, and 6 credits of electives.
- Doctoral students must complete 15 graduate credits, including a 3 credit (320 hour) applied evaluation internship under the supervision of a designated faculty member, and 6 credits of electives including 3 credits of seminar in advanced evaluation techniques.
- The certificate program is designed to be completed in four semesters of full-time study. An option does exist for finishing in three semesters.

Note: Some additional credits that do not apply to any degree or other certificate must be completed for each certificate program.

**Required Courses**

- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH
- BCHS 2558 - HEALTH PROGRAM EVALUATION
- BCHS 2503 - PRACTICUM (masters students) or
**Certificate Electives**

Students choose 6 credits from the following courses for their evaluation electives requirement:

- BCHS 2608 - INTRODUCTION TO COMMUNITY BASED PARTICIPATORY RESEARCH
- BCHS 2610 - CONCEPT MAPPING: A PARTICIPATORY RESEARCH METHOD
- BCHS 2612 - PROJECT MANAGEMENT IN PUBLIC HEALTH
- BCHS 2990 - SOCIAL DYNAMICS IN PUBLIC HEALTH
- BCHS 3002 - HEALTH SURVEY METHODS
- BCHS 3003 - SEMINAR IN ADVANCED EVALUATION TECHNIQUES
- BCHS 3007 - ETHNOGRAPHIC AND QUALITATIVE METHODS
- BCHS 3015 - COMMUNITY MAPPING AND INTRODUCTORY SPATIAL ANALYSIS
- BCHS 3030 - MEASUREMENT IN THE SOCIAL AND BEHAVIORAL SCIENCES
- PIA 2730 - COMMUNITY DEVELOPMENT AND FOCUS GROUPS

OR

- NUR 3055 - COMMUNITY DEVELOPMENT AND FOCUS GROUPS: PREPARATION, FACILITATION AND APPLICATION

- BCHS 2511 - INDEPENDENT STUDY

Some students may qualify for independent study in evaluation as determined by the certificate program director.

**Health Equity Certificate**

This innovative certificate program was created to address the systemic root causes of health disparities. While racial and ethnic health disparities are examples of the consequences of social and economic disadvantages, disparities may also be related to sexual orientation, religion, gender, native language, age, and disability status. The certificate provides students with an academic foundation for achieving health equity through assessing the complexity of inequities among diverse groups of marginalized populations, mobilizing communities where disparities exist, developing/evaluating culturally tailored interventions, and advocating for healthy public policy. The program is designed to increase the cultural competency of public health and other professionals and provide an interdisciplinary vehicle for individuals to pursue and strengthen their career interests relevant to health equity.

**Requirements for the Certificate**

This program addresses the systemic root causes of health disparities by providing trainees with an academic foundation for the promotion of health equity through conducting/evaluating culturally tailored community-based interventions, mobilizing communities where disparities exists, and advocating for healthy public policy.

Applicants must meet the requirements for admission to the MPH program.

Students must complete 15 credits, including Overview of Health Equity, Introduction to Community Health, Health Equity: Research and Interventions (or approved methods class substitute), and the Integrative Seminar in Health Equity. A field experience such as an equity-focused MPH practicum or participation in the Health Equity Journal Club is required. The certificate program is designed to be completed in four semesters of full-time study. An option does exist for finishing in three semesters.

**Note:** Some additional credits that do not apply to any degree or other certificate must be completed for each certificate program.
Required Courses

- BCHS 2554 - INTRODUCTION TO COMMUNITY HEALTH
- BCHS 2524 - OVERVIEW OF HEALTH EQUITY
- BCHS 2526 - HEALTH EQUITY RESEARCH: METHODS AND INTERVENTIONS
- BCHS 2528 - INTEGRATIVE SEMINAR IN HEALTH EQUITY

Methods Course Substitute

Students may substitute BCHS 2526 Health Equity Research: Methods and Interventions for one of the approved methods courses.

- BCHS 2523 - PUBLIC HEALTH PROGRAM PLANNING AND PROPOSAL WRITING (non-BCHS students)
- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH (non-BCHS students)
- BCHS 2558 - HEALTH PROGRAM EVALUATION
- BCHS 3003 - SEMINAR IN ADVANCED EVALUATION TECHNIQUES
- BCHS 3007 - ETHNOGRAPHIC AND QUALITATIVE METHODS

- BCHS 2526 - HEALTH EQUITY RESEARCH: METHODS AND INTERVENTIONS

and

- BCHS 2529 - TRANSLATING RESEARCH FOR POLICY AND PRACTICE

and

- BCHS 2530 - CONCEPT MAPPING: A PARTICIPATORY RESEARCH METHOD

- BCHS 3030 - MEASUREMENT IN THE SOCIAL AND BEHAVIORAL SCIENCES
- BCHS 3004 - HEALTH SURVEY METHODS
- BCHS 3015 - COMMUNITY MAPPING AND INTRODUCTORY SPATIAL ANALYSIS
- BCHS 3503 - PREVENTION SCIENCE: TRANSLATING KNOWLEDGE TO PRACTICE
- BIOST 2016 - SAMPLING DESIGN AND ANALYSIS
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2062 - CLINICAL TRIALS: METHODS AND PRACTICE
- BIOST 2098 - AGENT BASED MODELING
- EPIDEM 2023 - PARTICIPATORY MODELING AND SIMULATION IN PUBLIC HEALTH
- EPIDEM 2161 - METHODS INFECTIOUS DISEASES EPIDEMIOLOGY
- EPIDEM 2180 - EPIDEMIOLOGICAL METHODS 1
- EPIDEM 2187 - EPIDEMIOLOGICAL METHODS 2
- EPIDEM 2181 - DESIGN AND CONDUCT OF CLINICAL TRIALS
- EPIDEM 2220 - APPLIED SPATIAL/COMMUNITY EPIDEMIOLOGY
- EPIDEM 2981 - EPIDEMIOLOGY OF AGING-METHODS
- HPM 2064 - HEALTH POLICY ANALYSIS (master's students)
- HPM 3064 - HEALTH POLICY ANALYSIS (doctoral students)
- HPM 2063 - THE POLITICS OF HEALTH POLICY
- HPM 2028 - MICROECONOMICS APPLIED TO HEALTH
- HPM 2220 - COST EFFECTIVENESS ANALYSIS HEALTH CARE
- HPM 2905 - QUASI-EXPERIMENTAL DESIGN FOR HEALTH SERVICES RESEARCH
- HPM 3125 - INTERMEDIATE HEALTH ECONOMICS
- PIA 2730 - COMMUNITY DEVELOPMENT AND FOCUS GROUPS

Certificate Electives

- BCHS 2532 - DIMENSIONS OF AGING: CULTURE AND HEALTH
- BCHS 2560 - INTRODUCTION TO POPULATION PROBLEMS
- BCHS 2575 - SEMINAR MATERNAL AND CHILD HEALTH
- BCHS 2598 - SOCIAL INEQUALITIES IN HEALTH
- BCHS 2599 - PUBLIC HEALTH APPROACHES TO WOMEN'S HEALTH
Lesbian, Gay, Bisexual, and Transgender (LGBT) Health and Wellness Certificate

The interdepartmental (BCHS, EPID, IDM) Certificate Program will prepare students to collaborate and conduct independent research designed to improve the understanding of unique health concerns among lesbian, gay, bisexual, and transgender (LGBT) populations; participate in agency or organization planning, training, and delivery of health care for LGBT populations; work with local, state, and federal agencies in developing LGBT competent health care providers; provide leadership in public and private sector organizations serving the health and wellness needs of LGBT populations; and evaluate the effectiveness of health care delivery systems to meet the needs of LGBT populations.

In the United States, public health professionals seek to address health disparities. Students enrolled in this program will be prepared to address health disparities affecting subpopulations who may be experiencing a lower quality of health and wellness, due in part, to historic discrimination, with a focus on lesbian women, gay men, bisexuals, and transgender/transsexual individuals. As such, the certificate will offer courses that include information on identifying and documenting health disparities; impact of historical stigmatizing politics that contribute to development of health disparities; impact of politics and policy to improve means of addressing health disparities; design of appropriate research programs to address health disparities; theories behind intervention programs that work among disparate populations; and means to develop competency skills in working with stigmatized populations.

Requirements for the Certificate

This interdepartmental (BCHS, Epid, IDM) certificate program prepares students to conduct research designed to improve the understanding of unique health concerns among lesbian, gay, bisexual, and transgender populations, to participate in organized planning and delivery of health care for LGBT populations, and to provide leadership in organizations serving the health and wellness needs.

Applicants must meet the requirements for admission to Pitt Public Health.

Students must complete 15 graduate credits, a practicum, and a thesis or project related to LGBT health and wellness and oral presentation of the thesis or project for peers and members of the Center for LGBT Health Research, or at approved scientific meeting. The certificate program is designed to be completed in four semesters of full-time study. An option exists for finishing in three semesters.

Note: Some additional credits that do not apply to any degree or other certificate must be completed for each certificate program.

Required Courses

- PUBHLT 2018 - OVERVIEW OF LESBIAN, GAY, BISEXUAL AND TRANSGENDER HEALTH DISPARITIES
- BCHS 3503 - PREVENTION SCIENCE: TRANSLATING KNOWLEDGE TO PRACTICE
- PUBHLT 2020 - ADVANCED TOPICS IN LESBIAN, GAY, BISEXUAL, AND TRANSGENDER RESEARCH
- PUBHLT 2019 - PUBLIC HEALTH SPECIAL STUDIES **This may be substituted with departmental independent studies/thesis/dissertation credits if approved by advisor.

Certificate Electives
A minimum of seven credits in elective courses must be completed. For a list of approved electives see below. Other electives may be taken with the approval of one of the certificate directors.

- BCHS 2520 - THEORIES OF HEALTH BEHAVIOR AND HEALTH EDUCATION
- BCHS 2525 - INTRODUCTION TO APPLIED RESEARCH
- BCHS 2558 - HEALTH PROGRAM EVALUATION
- BCHS 3002 - HEALTH SURVEY METHODS
- BCHS 2598 - SOCIAL INEQUALITIES IN HEALTH
- EPIDEM 2160 - EPIDEMIOLOGY OF INFECTIOUS DISEASES
- EPIDEM 2400 - PSYCHOSOCIAL FACTORS IN DISEASE
- HPM 2100 - ORGANIZATION STUDIES: THEORY AND APPLICATIONS TO HEALTH CARE SYSTEMS
- HPM 2135 - HEALTH POLICY
- HPM 2142 - MANAGING HEALTH OF POPULATIONS
- IDM 2032 - HUMAN DIVERSITY AND PUBLIC HEALTH
- IDM 2034 - CONTROL AND PREVENTION OF HIV/AIDS
- IDM 2161 - METHODS OF INFECTIOUS DISEASE EPIDEMIOLOGY

Department of Environmental and Occupational Health

The mission of the Department of Environmental and Occupational Health (EOH) is to study and elucidate the health effects of exposure to chemical, physical, and biological agents encountered in the workplace or general environment. Intrinsic to this research mission is that fundamental information regarding actions of environmental toxicants will provide insight into basic human biology in health and disease. Accordingly, current research includes fundamental studies on free radical biology and especially oxidative lipidomics and mitochondrial function, genetic basis of susceptibility to injurious agents including gene x environment approaches, cellular and molecular regulation of reparative response to injury including mesenchymal stem cells as modifying biological therapeutic agents, cardiopulmonary toxicology of heavy metals and particulate matter including nanoparticles, molecular carcinogenesis including metabolism of telomeres and DNA damage and repair, genetic and epigenetic contributions to neurodegenerative disease with focus on cholesterol dyshomeostasis and integrated studies in complex disorders such as environmental induced interstitial pulmonary fibrosis. In addition, a focus on exposure science and environmental epidemiology supports efforts into the health effects of air pollution and public health concerns associated with energy procurement including unconventional natural gas development. Translation of these collective efforts in basic and applied research is in part provided by members of EOH active in environmental policy, risk assessment, and community behavioral sciences. These efforts coincide and are coordinated with mentoring and educational programs for pre-doctoral (PhD, MS) and (DrPH, MPH) students.

Contact Information

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www.eoh.pitt.edu

For information on admission or registration, contact Penny Weiss at 412-383-7297 or email pweiss@pitt.edu.

Admissions

Course work in mathematics and the physical, chemical, and biological sciences must be documented in the undergraduate transcript. Acceptable undergraduate training includes a bachelor's degree in the physical, chemical, or biological sciences with a minimum of two courses each in organic chemistry, biology, physics, and calculus.
Applicants for admission must also take the Graduate Record Examination (GRE). The MPH and DrPH programs also accept MLATS and DATS. If the candidate already has a graduate or professional degree a waiver may be approved by the department. Consistent with Pitt Public Health requirements, students are ordinarily required to have at least a 3.00 (on a 4.00 scale) overall undergraduate GPA, and a 3.00 GPA in the basic science courses (chemistry, physics, biology, mathematics).

**Financial Assistance**

Financial support is available for tuition and stipend for PhD students through a graduate research assistance program from the University of Pittsburgh Graduate School of Public Health. Stipends are made available from the Department of Environmental and Occupational Health, and from individual research laboratories. Although DrPH and master's students in the environmental health and/or environmental health risk assessment programs are eligible for support, in general it is expected that tuition and stipends for these students will be derived from external sources.

**Graduate Degree Programs**

**PhD and MS Programs**

The PhD in Environmental Health Sciences is designed to provide a broad theoretical and practical education for individuals who desire positions in academic, industrial or government laboratories as teachers and/or researchers in the multifaceted discipline of Environmental Health Science with an emphasis on environmental impact on human disease and disease susceptibility. The Environmental Health Sciences program is an integrated modern curriculum combining training in the toxicological and environmental biophysics disciplines that are traditional to the Department of Environmental and Occupational Health with the new and continually developing fields of cellular and molecular pathobiology of environmental disease and gene environment interactions. The program provides an understanding of how relevant environmental exposures, laboratory based model systems, and gene-environment responses can be interpreted and applied to the study of disease etiology in exposed and potentially exposed human populations. Master of Science degree in Environmental Health Sciences may be pursued and obtained along the way or independently.

EOH PhD and MS Handbook

**MPH and DrPH Programs**

The Master of Public Health in Environmental and Occupational Health is a key component of Public Health. Local environmental health professionals are the "front line troops" in the public health battle to prevent disease. The Department of Environmental and Occupational Health offers an MPH degree program to provide professional education for individuals who desire positions in environmental health or who already have environmental health positions and are seeking to strengthen their professional competency. The Doctor of Public Health in Environmental and Occupational Health provides further advanced professional education for those individuals who desire leadership positions in public health practice, policy analysis, professional communication, program management, high-level administration, and/or decision-making in an environmental health setting.

EOH MPH and DrPH Handbook

**Certificate Programs**

The certificate in Environmental Health Risk Assessment is offered for interested students and for professionals currently employed in environmental health positions. The risk assessment certificate program provides concentrated coursework relevant to human health risk evaluation and is an efficient means for achieving proficiency in this area of environmental health.
Environmental and Occupational Health, DrPH

Program Requirements - 72 credits

DrPH students must complete the MPH curriculum to satisfy the preliminary qualifying requirements for the program. Students spend the remainder of the program completing their research projects for a total of 72 credits. During the research project, students will meet with their dissertation committee to present an overview of their planned dissertation and be orally examined in areas broadly relevant to their chosen specialty. Preparation and submission of the written manuscript followed by its oral presentation to the dissertation committee completes the program.

EOH Required Course Work

- EOH 2021 - SPECIAL STUDIES 2 Credits Essay
- EOH 2108 - ENVIRONMENTAL AND OCCUPATIONAL HEALTH PRACTICUM
- EOH 2122 - TRANSPORT AND FATE OF ENVIRONMENTAL AGENTS
- EOH 2175 - PRINCIPLES OF TOXICOLOGY
- EOH 2180 - INTRODUCTION TO RISK SCIENCES
- EOH 2181 - RISK ASSESSMENT PRACTICUM
- EOH 2309 - ENVIRONMENTAL HEALTH CHEMISTRY
- EOH 2504 - PRINCIPLES OF ENVIRONMENTAL EXPOSURE

GSPH Core Requirements

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
- PUBHILT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHILT 2016 - CAPSTONE COURSE: PROBLEM SOLVING IN PUBLIC HEALTH
- PUBHILT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH

Environmental and Occupational Health, PhD

Program Requirements

PhD students must complete coursework and research for a total of 72 credits. Attendance and participation in departmental seminars and journal clubs is required. During the first two years of study, students will take the majority of their coursework and have an opportunity to rotate in three different research laboratories. After the first year, students are expected to engage in independent research projects oriented towards their thesis research. Preliminary qualifying examinations for the PhD degree occur in the second year after all core courses have been taken. Students spend the remainder of the graduate program completing the research project and taking selected elective courses. Dissertation preparation and defense complete the PhD requirements. See General Requirements for Doctoral Degrees and Regulations Pertaining to Doctoral Degrees for more information.

EOH PhD Core Requirements

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- EOH 2110 - ROTATION/PRACTICUM
- EOH 2504 - PRINCIPLES OF ENVIRONMENTAL EXPOSURE
- EOH 3210 - PATHOPHYSIOLOGY OF ENVIRONMENTAL DISEASE
- EOH 2310 - MOLECULAR FUNDAMENTALS
Electives

Students must take 10 credits in Electives from University wide graduate level courses

Environmental and Occupational Health, MPH

Program Requirements -47 credits

**MPH students** must complete the prescribed coursework. In addition, they must complete an independent study under the supervision of a faculty member and register for a practicum experience. Students will take the school-wide core courses as part of the required credits to complete their degree. MPH students are also required to write an essay that is submitted to an examination committee for approval. The curriculum consists of 47 credits and the degree normally takes two years.

GSPH Core Requirements

Required coursework for EOH MPH degree

- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHLT 2016 - CAPSTONE COURSE: PROBLEM SOLVING IN PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
- BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY

EOH Core Requirements

- EOH 2180 - INTRODUCTION TO RISK SCIENCES
- EOH 2181 - RISK ASSESSMENT PRACTICUM
- EOH 2175 - PRINCIPLES OF TOXICOLOGY
- EOH 2504 - PRINCIPLES OF ENVIRONMENTAL EXPOSURE
- EOH 2122 - TRANSPORT AND FATE OF ENVIRONMENTAL AGENTS
- EOH 2309 - ENVIRONMENTAL HEALTH CHEMISTRY
- EOH 2108 - ENVIRONMENTAL AND OCCUPATIONAL HEALTH PRACTICUM
- EOH 2021 - SPECIAL STUDIES 2 Credit Essay

Electives - Total 10 Credits

Students are required to take 10 credits of electives (school wide graduate level)

Environmental and Occupational Health, MS
Program Requirements

**MS students** will follow the same coursework as the PhD students. They will, however, finish their program with 42 credits and a thesis. The degree takes approximately two years to complete. Students are also subject to a comprehensive exam. PhD students who do not progress to admission to candidacy may obtain a Master of Science with the completion of the MS requirements including a thesis.

**MS Course Requirements**

- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- PUBHILT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHILT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS 2 Semesters
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- EOH 2175 - PRINCIPLES OF TOXICOLOGY
- EOH 2109 - MOLECULAR TOXICOLOGY JOURNAL CLUB Minimum 4 Semesters
- EOH 2504 - PRINCIPLES OF ENVIRONMENTAL EXPOSURE
- EOH 3210 - PATHOPHYSIOLOGY OF ENVIRONMENTAL DISEASE
- EOH 2310 - MOLECULAR FUNDAMENTALS
- EOH 2110 - ROTATION/PRACTICUM At Least 2 Semesters
- EOH 2021 - SPECIAL STUDIES

**Environmental Health Risk Assessment Certificate**

This program provides concentrated coursework relevant to human health risk evaluation.

**General Requirements**

Students must have a graduate degree or be pursuing one concurrently. Students must complete 15 credits: 11 credits of required courses (EOH 2122, EOH 2175, EOH 2181, and EOH 2504) plus 4 elective credits.

**Required Core**

- EOH 2175 - PRINCIPLES OF TOXICOLOGY
- EOH 2181 - RISK ASSESSMENT PRACTICUM
- EOH 2504 - PRINCIPLES OF ENVIRONMENTAL EXPOSURE
- EOH 2122 - TRANSPORT AND FATE OF ENVIRONMENTAL AGENTS

**Suggested Electives**

Electives 4 credits

- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- EOH 2180 - INTRODUCTION TO RISK SCIENCES
- EOH 2309 - ENVIRONMENTAL HEALTH CHEMISTRY

**Department of Epidemiology**

Epidemiology is the application of the scientific method to the study of disease in populations for the purpose of prevention or control. It is a key basic science of public health and preventive medicine. Epidemiologists play a fundamental role in public health and preventive medicine by identifying variabilities in human situations that may have a critical influence on the occurrence of disease within populations.
The epidemiological method for studying a problem involves three approaches:

- Description of the frequency and determinants of a disease in a defined population;
- Evaluation of factors that may cause a disease; and
- Experimental studies of the effects of modifying risk factors on the subsequent frequency of a disease.

**Contact Information**

**Chair:**
Anne B. Newman, MD, MPH
Katherine M. Detre Endowed Chair of Population Health Sciences
Professor of Epidemiology, Medicine, and Clinical and Translational Sciences
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For information on admission and registration, please contact the Epidemiology Student Services Manager and Program Administrator, Lori S. Smith, at smithl@pitt.edu.

**Vice Chair for Education** Maria Brooks, PhD mbrooks@pitt.edu
**Director, Doctoral Program** Thomas Songer, PhD tis@pitt.edu
**Director, Master's Program** Nancy W. Glynn, PhD epidnwg@pitt.edu
**Director, MD/PhD Program** Caterina Rosano, MD, MPH rosanoc@edc.pitt.edu

**Admissions**

Applying for Admission to Pitt Public Health
The department accepts students with a variety of prior health-related professional degree backgrounds, prior graduate degrees, and superior students who have completed a bachelor's degree. Students may matriculate for the MPH, MS, DrPH, or PhD degree. A joint MD/PhD program is also available. Major areas of emphasis within the department are aging, psychiatric, cancer, injury prevention, applied public health cardiovascular and diabetes, clinical trials and methods, infectious disease, molecular and genetic epidemiology, environmental epidemiology, global health, prevention lifestyle and physical activity, neuroepidemiology, obesity and nutritional epidemiology, reproductive, perinatal, and pediatric epidemiology, and women's health.

Financial Assistance

Graduate Student Researcher (GSR) Appointment Information for doctoral program applicants and students only: Graduate Student Researcher Position

Financial Assistance: Tuition & Financial Aid

Minority Student Support Information: http://www.healthequity.pitt.edu/funding-opportunities

Research

In fiscal year 2017-2018, the faculty within the Department of Epidemiology received approximately $22.5 million in research funds. These projects, mostly federally funded, included activity in the major areas of focus within the department. For additional information, review details about our research practices and our numerous Areas of Research Emphasis.

Degree Requirements: Master's and Doctoral Curricula

The student's course of study includes Graduate School of Public Health core courses, department core courses, electives drawn from our frequently used courses, and other appropriate selections throughout the University. The sequencing of courses is developed in conjunction with the major advisor, taking into account background, area of focus, degree program, and Pitt Public Health requirements. The minimum credit requirement is 30 for the master's programs for health professionals and 72 for the doctoral programs. A 45-credit MPH or MS is available for students who are not health professionals. This is a 16-month or 20-month program; MPH students will be involved in a hands-on internship. Master's students must complete a (MS) thesis or essay (MPH) and doctoral students (PhD or DrPH) must complete a dissertation and one-semester Teaching Practicum experience. DrPH students must also fulfill a practicum requirement.

The following are the required departmental courses for students pursuing degrees in the Department of Epidemiology.

Epidemiology, DrPH

Pitt Public Health Requirements

- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY

Students may discuss potential exemption from this requirement with their academic advisors based upon their previous healthcare backgrounds.

- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
- Academic Integrity Training
- PUBHLT 2035 - APPLICATIONS IN PUBLIC HEALTH

Department of Epidemiology Requirements

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Electives

Add electives as recommended by academic advisors to earn total credits required for the program. All Pitt Public Health course descriptions may be found on the Department of Epidemiology course offerings.

Epidemiology, PhD

Pitt Public Health Requirements

- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- BIOC 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
- Academic Integrity Training

Department of Epidemiology Requirements

- EPIDEM 2004 - PATHOPHYSIOLOGY ACROSS THE LIFE SPAN OR
- EOH 3210 - PATHOPHYSIOLOGY OF ENVIRONMENTAL DISEASE
EPIDEM 2160 - EPIDEMIOLOGY OF INFECTIOUS DISEASES
EPIDEM 2170 - CHRONIC DISEASE EPIDEMIOLOGY
EPIDEM 2180 - EPIDEMIOLOGICAL METHODS 1
EPIDEM 2181 - DESIGN AND CONDUCT OF CLINICAL TRIALS
EPIDEM 2183 - READING, ANALYZING AND INTERPRETING PUBLIC HEALTH MEDICAL LITERATURE
EPIDEM 2187 - EPIDEMIOLOGICAL METHODS 2
EPIDEM 2215 - TEACHING PRACTICUM
EPIDEM 2230 - ADVANCED TOPICS IN EPIDEMIOLOGICAL METHODS
EPIDEM 2250 - SEMINAR IN EPIDEMIOLOGY
EPIDEM 2260 - EPIDEMIOLOGICAL BASIS DISEASE CONTROL
EPIDEM 2600 - INTRODUCTION TO MOLECULAR EPIDEMIOLOGY
EPIDEM 2920 - RESEARCH AND DISSERTATION PHD OR
FTDR 3999 - FULL-TIME DISSERTATION STUDY

PUBHLT 2030 - RESEARCH ETHICS AND THE RESPONSIBLE CONDUCT OF RESEARCH

PSYED 2422 - DATA ANALYSIS USING COMPUTER PACKAGES OR
EPIDEM 2185 - INTRODUCTION TO SAS

BIOST 2046 - ANALYSIS OF COHORT STUDIES
BIOST 2050 - LONGITUDINAL AND CLUSTERED DATA ANALYSIS
BIOST 2066 - APPLIED SURVIVAL ANALYSIS: METHODS AND PRACTICE

Two advanced quantitative courses are required. The following can be substituted for BIOST 2066 and/or 2050:
BIOST 2016, 2062, 2086
BCHS 3002, 3015
PSYED 3408, 3416, or 3417
PSYED 3410, BIOST 2098, and BIOST 3023 also meet this requirement but are no longer offered.
Other courses may qualify at advisor's discretion.

BIOST 2049 - APPLIED REGRESSION ANALYSIS

Electives

Add electives as recommended by academic advisors to earn total credits required for the program. All Pitt Public Health course descriptions may be found on the Department of Epidemiology course offerings.

Epidemiology, MPH

Pitt Public Health Requirements

EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
Academic Integrity Training
PUBHLT 2033 - FOUNDATIONS IN PUBLIC HEALTH
PUBHLT 2034 - PUBLIC HEALTH COMMUNICATIONS
PUBHLT 2035 - APPLICATIONS IN PUBLIC HEALTH
Department of Epidemiology Requirements

- EPIDEM 2160 - EPIDEMIOLOGY OF INFECTIOUS DISEASES
- EPIDEM 2170 - CHRONIC DISEASE EPIDEMIOLOGY
- EPIDEM 2180 - EPIDEMIOLOGICAL METHODS 1
- EPIDEM 2181 - DESIGN AND CONDUCT OF CLINICAL TRIALS
- EPIDEM 2210 - SPECIAL STUDIES - ESSAY
- EPIDEM 2214 - PUBLIC HEALTH INTERNSHIP
- EPIDEM 2250 - SEMINAR IN EPIDEMIOLOGY
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- Internal Review Board (IRB) Training

Presentation Training - Complete at least one poster or oral presentation. Advisor sign-off is required.
- BIOST 2049 - APPLIED REGRESSION ANALYSIS

Electives

Add electives as recommended by academic advisors to earn total credits required for the program. All Pitt Public Health course descriptions may be found on the Department of Epidemiology course offerings.

Epidemiology, MS (30 Credit)

Pitt Public Health Requirements

- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
- Academic Integrity Training

Department of Epidemiology Requirements

- EPIDEM 2160 - EPIDEMIOLOGY OF INFECTIOUS DISEASES OR
- EPIDEM 2170 - CHRONIC DISEASE EPIDEMIOLOGY OR
- EPIDEM 2260 - EPIDEMIOLOGICAL BASIS DISEASE CONTROL
- EPIDEM 2180 - EPIDEMIOLOGICAL METHODS 1
- EPIDEM 2181 - DESIGN AND CONDUCT OF CLINICAL TRIALS
- EPIDEM 2210 - SPECIAL STUDIES - ESSAY
- EPIDEM 2250 - SEMINAR IN EPIDEMIOLOGY
- PSYED 2422 - DATA ANALYSIS USING COMPUTER PACKAGES
- EPIDEM 2185 - INTRODUCTION TO SAS OR
- EPIDEM 2187 - EPIDEMIOLOGICAL METHODS 2 OR
- BIOST 2046 - ANALYSIS OF COHORT STUDIES
- BIOST 2066 - APPLIED SURVIVAL ANALYSIS: METHODS AND PRACTICE OR
- BIOST 2050 - LONGITUDINAL AND CLUSTERED DATA ANALYSIS
- BIOST 2049 - APPLIED REGRESSION ANALYSIS

Electives
Add electives as recommended by academic advisors to earn total credits required for the program. All Pitt Public Health course descriptions may be found on the Department of Epidemiology course offerings.

**Epidemiology, MS (45 Credit)**

**Pitt Public Health Requirements**

- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
- Academic Integrity Training

**Department of Epidemiology Requirements**

- EPIDEM 2160 - EPIDEMIOLOGY OF INFECTIOUS DISEASES
- EPIDEM 2170 - CHRONIC DISEASE EPIDEMIOLOGY
- EPIDEM 2180 - EPIDEMIOLOGICAL METHODS 1
- EPIDEM 2181 - DESIGN AND CONDUCT OF CLINICAL TRIALS
- EPIDEM 2210 - SPECIAL STUDIES - ESSAY
- EPIDEM 2250 - SEMINAR IN EPIDEMIOLOGY
- EPIDEM 2187 - EPIDEMIOLOGICAL METHODS 2 OR
- BIOST 2046 - ANALYSIS OF COHORT STUDIES OR
- BIOST 2066 - APPLIED SURVIVAL ANALYSIS: METHODS AND PRACTICE OR
- BIOST 2050 - LONGITUDINAL AND CLUSTERED DATA ANALYSIS
- BIOST 2049 - APPLIED REGRESSION ANALYSIS
- PSYED 2422 - DATA ANALYSIS USING COMPUTER PACKAGES OR
- EPIDEM 2185 - INTRODUCTION TO SAS
- Internal Review Board (IRB) Training
- Presentation Training - Complete at least one poster or oral presentation. Advisor sign-off req.

**Electives**

Add electives as recommended by academic advisors to earn total credits required for the program. All Pitt Public Health course descriptions may be found on the Department of Epidemiology course offerings.

**Department of Health Policy and Management**

The Department of Health Policy and Management prepares individuals to assume roles of leadership, policy development, and management within the health care system and public health. Its educational programs are grounded in the faculty's contributions in advancing the state of knowledge and professional practice in institutional and system health care management and the development, advocacy, analysis, and implementation of health policy. The HPM Faculty are engaged in interdisciplinary research addressing a range of problems relevant to public policy, organization, and management as applied to health care organizations and systems and in various professional and community service activities.

**Contact Information**

In order to obtain further information or to inquire about making application, admission, or registration about the Department of Health Policy and Management and its programs, please contact:
MHA and MHA/MBA

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MPH

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JD/MPH

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The leadership of the Department of Health Policy and Management includes Mark S. Roberts, MD, MP, Chair, and Tina Micale, Departmental Administrator.

Graduate Degree Programs

The Department of Health Policy and Management offers the following graduate degree programs: Master of Health Administration (MHA), Master of Public Health (MPH), Master of Health Administration and Master of Business Administration (MHA/MBA), Juris Doctor/Master of Public Health (JD/MPH), Master of Science in Health Services Research and Policy (MS), a PhD in Health Services Research and Policy, a Graduate Certificate in Health Care Systems Engineering, and a Graduate Certificate in Health Systems Leadership and Management.

The MHA program offers a graduate education relevant to both the aspiring and already practicing health care management/policy professional; a curriculum that anchors the program in its public health tradition while also providing the students with necessary tools, technologies, and knowledge in organizational and system management and policy analysis. Career and professional development activities are provided through the professional practice component of the curriculum which includes a Management Residency, the Executive in Residence program, professional mentorship, and participation in the HPMA Student Chapter and other networking and professional development opportunities.

The MPH Program in the Department of Health Policy and Management in the Graduate School of Public Health at the University of Pittsburgh provides advanced education for recent graduates, entry-level, and mid-career professionals to facilitate their career development as leaders and managers, health professionals, policy analysts, and advocates for various roles and contexts in public health and health care.

The MHA/MBA joint degree program offered by the Department of Health Policy and Management and the Katz Graduate School of Business provides an outstanding professional development opportunity for high-achieving applicants. This program prepares graduates to assume fast-track middle management and executive leadership positions in health care organizations. This rigorous program combines the expertise of the Katz faculty in finance, marketing, business operations and strategic planning with that of the HPM faculty in health care structures and policy, outcomes measures, data analytics and patient safety and quality management. This three-year, 78-credit program includes a required management residency in the form of two separate field placements during the summer terms or one extended residency experience.

The department also offers a joint degree program with the School of Law, the JD/MPH program in law and health policy. This joint degree program was developed in recognition of the important area of intersection between the practice of law, health policy and health care delivery in the United States. Graduates of this program are provided the academic foundation for professional roles in public policy analysis and development, the practice of law for private clients with specialization in health law, and as inhouse counsel for health care organizations and systems and regulatory agencies. Applicants must be admitted to both the Graduate School of Public Health and the School of Law.

The Master of Science in Health Services Research and Policy program prepares graduates for positions in health services research and policy, analytics and also prepares them for higher level education (such as a PhD). Graduates will be prepared to conduct research on policy issues affecting the organization, financing, and delivery of health care and public health services.
The PhD in Health Services Research and Policy provides advanced educational and professional development opportunities for individuals entering a career in health services research and policy. The program meets an ongoing need for public health researchers who focus on cost, access, and quality of the health care system. Graduates will be prepared to conduct research on policy issues affecting the organization, financing, and delivery of health care and public health services. The goals of the program are to provide graduates with contemporary training in research design and methods appropriate for studying the health care system, experience in developing an NIH style grant proposal, and experience writing for publication, presenting results at a scientific meeting, and teaching. Students identify an area of focus that informs the substance and provides the theoretical framework for their research. Upon completing the program, graduates will be prepared for positions in academia, government or the private sector as experts in health services research and policy.

The Graduate Certificate in Health Care Systems Engineering is offered jointly by the Graduate School of Public Health and the Swanson School of Engineering. This certificate is designed for students in the Department of Health Policy & Management (Pitt Public Health) and the Department of Industrial Engineering (Swanson) and provides students with specific experiences and analytical tools required for effective problem solving relative to quality improvement and process engineering in the health care industry. Students are equipped to serve as leaders in addressing the challenges health care faces in the twenty-first century. Health care management students will learn engineering principles, models, and tools following a systems approach to analysis, problem solving, and project implementation, while engineering students gain knowledge of health care operations, the organizational culture, and the strategic issues facing the industry. With a focus on innovation, effectiveness, and efficiency in health care and public health, the certificate nurtures well-educated professionals and leaders in their disciplines. Contact Jessica Dornin for more information.

The Graduate Certificate in Health Systems Leadership and Management provides rigorous training for healthcare clinicians and providers looking to enhance their careers and improve healthcare delivery through strengthened leadership and management skills. The certificate is primarily designed for physicians, but is open to all healthcare clinicians and providers. The curriculum of 15-16 total credits consists of coursework in the following areas: Leadership Theory and Practice, Strategic Management, Financial Management, Health Policy, Quality and Patient Safety, and an applied project. Contact Jessica Dornin for more information.

**Admission Requirements**

**Masters Degree Programs:** The Graduate School of Public Health requires that students apply online for all degree programs. Requirements for admission include a bachelor's degree from an accredited college or university; acceptable scores on the Graduate Record Examination (GRE) for the MS, MHA and MPH and acceptable scores on the GRE and/or LSAT for the JD/MPH; and successful completion of: three postsecondary (college/university)-level semester credits in biology; three post-secondary (college or university) level semester credits in mathematics (algebra or higher); and 6 post-secondary (college/university) level semester credits in social and behavioral sciences, preferably including one course in economics.

In addition, the Admissions Committee cites the following as important factors in the admissions decision: undergraduate performance, GRE scores, letters of recommendation, relevant work (or volunteer) experience, and good interpersonal and communication skills. Most applicants are interviewed as part of the application review process. Students enroll in August of each year. Although a rolling admissions process is in place, applicants are encouraged to apply as soon as possible and prior to the end of May. International University of Pittsburgh students should apply by February 1.

**Doctoral Degree Program:** Applicants to the PhD Program in Health Services Research and Policy must hold a baccalaureate degree with a GPA of at least 3.3 desirable; college level coursework in calculus with a grade of 3.0 or better is a prerequisite; applicants must submit scores on the verbal, quantitative and critical thinking and analytical writing portion of the Graduate Record Examination (GRE)-a quantitative score of 720 or higher, verbal score of 560 or higher, and analytical writing of 5.0 or higher are desirable. Applicants for whom English is not their first language must submit scores from the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) exam. Students must score a minimum of 213 on the computerized TOEFL (or 550 on the paper-based version). The minimum score for the IELTS is 65.

In addition, applicants must demonstrate in their personal statement that they have a clear understanding of how the program of study will benefit them in achieving their career goals. Three letters of recommendation are required from individuals who are in a position to judge the applicant's professional and or academic abilities. At least one recommendation should be from an individual who can comment on the applicant's academic qualifications (e.g., former instructor or advisor).

**Certificate Program in Health Care Systems Engineering:** Applicants to this program must be admitted to or enrolled in the MHA program, the HPM-MPH program, or the MS program in industrial engineering.
**Certificate Program in Health Systems Leadership and Management:** All Certificate applicants, except those already enrolled in GSPH, need to apply through SOPHAS. In addition, the Certificate applicant will submit a brief statement addressing: interest in health systems leadership and management; previous experience; areas of interest; and the relation of the Certificate to career goals.

The admission requirements for applicants are based on completion of at least an advanced health care provider degree (e.g. MD, RN, PharmD, PT, OT) or appropriate job experience.

**Financial Assistance**

The Department of Health Policy and Management has limited scholarship funds and these funds are allocated separate from admission decisions. The scholarship funds are mainly awarded to incoming high caliber students on an annual basis. Graduate student assistantship and research positions are periodically available on a competitive basis.

**Department Web site:** www.hpm.pitt.edu

**Health Services Research and Policy, PhD**

**Required Public Health Core Courses**

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- BIOST 2046 - ANALYSIS OF COHORT STUDIES
- BIOST 2049 - APPLIED REGRESSION ANALYSIS
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2216 - HEALTH INSURANCE: FINANCING HEALTH CARE
- HPM 2821 - CURRENT TOPICS IN HEALTH ECONOMICS
- HPM 3010 - SEMINAR ON ORGANIZATIONAL STUDIES: HEALTHCARE ORGANIZATIONS AND ENVIRONMENTS
- HPM 3064 - HEALTH POLICY ANALYSIS
- HPM 3065 - ADVANCED HEALTH POLICY ANALYSIS: IMPLEMENTATION, EVALUATION, AND TRANSLATION
- HPM 3125 - INTERMEDIATE HEALTH ECONOMICS
- HPM 3501 - SEMINAR IN HEALTH SERVICES RESEARCH METHODS 1
- HPM 3502 - SEMINAR IN HEALTH SERVICES RESEARCH METHODS 2
- HPM 3505 - ADVANCED EMPIRICAL MICROECONOMICS METHODS WITH APPLICATIONS FOR HEALTHCARE RESEARCH
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS

**Other Requirements**

*HPM 3064: Health Policy Analysis is the prerequisite to HPM 3065 and must be taken during the spring term of the first year. In addition to required courses, students must have a minimum of 72 credits to graduate. Full Time Dissertation Study; Current Topics - Must attend all semesters and register for at least 2 Semesters; Teaching (1 credit) - Must serve as teaching assistant at least one semester; Area of Focus (Minimum 12, including electives)

**Note:**

(a) Students without previous experience in health care are expected to take HPM 2105: Health and Medical Care Organization

(b) Students must register for 3 dissertation credits or one semester of Full Time Dissertation Research (FTDR).

**Requirements for the Ph.D. Degree:**

(Note: This is not a complete list of requirements.)
For an overview of University-wide regulations for doctoral students, see Regulations Pertaining to Doctoral Degrees. All Pitt Public Health doctoral students must:

- Complete specific courses as determined by the program or the school, including at least 3 credits of 3100 (dissertation) or one term of FTDR (full-time dissertation research).
- Fulfill the University's residency requirement.
- Satisfactorily complete the preliminary/qualifying examination, the comprehensive examination, the dissertation overview, the dissertation defense, and the annual Individual Development Plan.
- Meet the requirement for proficiency in tools of research.
- Register for two terms of Public Health Grand Rounds.
- Complete the online Academic Integrity Modules in the first semester.

Individual programs will provide specific information on fulfillment of these requirements.

The Health Services Research and Policy (HSRP) PhD program meets an ongoing need for public health researchers who focus on cost, access and quality of the health care system. Graduates will be prepared to conduct research on policy issues affecting the organization, financing, and delivery of health care and public health services.

The PhD requires a minimum of 72 credits. Students will work with their academic advisors to develop an area of focus with at least 12 credits (included in the 72 credit total) that focuses on a discipline or area of interest. The area of focus is the opportunity for students to gain specialized skills and knowledge relevant to their chosen research area. The courses for the area of focus can be based in a traditional discipline, an established field, or can be thematically linked based on the students' interests and goals. For example, students may choose from a traditional discipline such as economics, psychology, sociology or bioethics. Others may choose to focus on a technical area such as quantitative or qualitative research methods or survey design, or a substantive area such as quality and patient safety, gerontology, pharmacoepidemiology, substance abuse, or mental health. Students must successfully pass a preliminary exam given after the first year, a comprehensive exam given after the second year, and typically present their dissertation overview towards the end of the third year. The doctoral dissertation will take the form of three thematically linked manuscripts of publishable quality.

PhD Curriculum

Health Policy and Management, JD/MPH

Program Requirements

**MPH students** must complete the prescribed coursework. In addition, they must complete a capstone intellectual product (master's essay) under the guidance of a faculty committee and register for a practicum experience. Students will take the school-wide core courses as part of the required credits to complete their degree.

Pitt Public Health requires the completion of 45 credits to receive a Master of Public Health (MPH) degree, including 40 hours of required courses and 5 elective credits. However, joint degree participants may cross-count up to 8 hours of law school credits towards their MPH.

The School of Law requires 88 credits for the Juris Doctor. Of these, 12 credits may be cross-counted from Pitt Public Health. Overall a total of 113 credit hours is required for completing the joint degree program, which is 20 credits fewer than completing all of the coursework independently.

Pitt Public Health Core Requirements

- BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
*Must register for two terms

- PUBHLT 2033 - FOUNDATIONS IN PUBLIC HEALTH
- PUBHLT 2034 - PUBLIC HEALTH COMMUNICATIONS
- PUBHLT 2035 - APPLICATIONS IN PUBLIC HEALTH

HPM Core Requirements

- HPM 2012 - FINANCIAL MANAGEMENT FOUNDATIONS HEALTH CARE AND PUBLIC HEALTH
- HPM 2025 - HPM PRACTICUM
- HPM 2028 - MICROECONOMICS APPLIED TO HEALTH
- HPM 2049 - HUMAN RESOURCES MANAGEMENT FOR HEALTH CARE AND PUBLIC HEALTH PROFESSIONALS
- HPM 2055 - MANAGING HEALTH PROGRAMS AND PROJECTS
- HPM 2063 - THE POLITICS OF HEALTH POLICY
- HPM 2064 - HEALTH POLICY ANALYSIS
- HPM 2081 - PUBLIC HEALTH AGENCY MANAGEMENT
- HPM 2133 - LAW IN PUBLIC HEALTH LAW
- HPM 2028 - MICROECONOMICS APPLIED TO HEALTH

Requirements for the JD/MPH Degree:

For the JD/MPH degree, students enrolled in the joint-degree program receive integrated training in law and public health over a three-and-one-half-year period. Students must apply to and be accepted by the School of Law and then can apply to the Graduate School of Public Health. Once admitted, the student completes the first year of law school before registering for courses in public health. During subsequent semesters students are encouraged to integrate coursework between the schools to best accommodate the students learning objectives. If obtained separately, the combined credit-hour requirements for the JD and MPH degrees is 133 credits (88 for the JD, and 45 for the MPH). Students enrolled in this joint-degree program, however, are able to apply a number of courses toward fulfillment of both degrees simultaneously thereby reducing the total required credits to 113.

JD/MPH Curriculum

Health Policy and Management, MHA/MBA

Required Public Health Core Courses

- BACC 2401 - FINANCIAL ACCOUNTING
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL Decision: FIRMS AND MARKETS
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BSEO 2401 - BUSINESS ETHICS & SOCIAL PERFORM
- HPM 2105 - INTRODUCTION TO THE US HEALTHCARE DELIVERY SYSTEM 1
- HPM 2108 - LEADERSHIP, PROFESSIONALISM AND CAREER DEVELOPMENT
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
- BFIN 2409 - FINANCIAL MANAGEMENT 1
- BMIS 2409 - INFORMATION SYSTEMS
- HPM 2106 - HEALTH SYSTEMS LEADERSHIP AND PROFESSIONAL DEVELOPMENT 2
- HPM 2141 - MANAGERIAL EPIDEMIOLOGY
- HPM 2216 - HEALTH INSURANCE: FINANCING HEALTH CARE
- HPM 2115 - HEALTH POLICY AND MANAGEMENT RESIDENCY
- BMKT 2409 - MARKETING MANAGEMENT
- BOAH 2421 - HUMAN RESORC COMPETITIVE ADVNTG
- BOAH 2517 - INTERPERSONAL SKILLS MANAGERS 1
- BSPP 2409 - STRATEGIC MANAGEMENT
- HPM 2012 - FINANCIAL MANAGEMENT FOUNDATIONS HEALTH CARE AND PUBLIC HEALTH
- HPM 2028 - MICROECONOMICS APPLIED TO HEALTH
General Requirements for Master's Degrees

(Note: This is not a complete list of requirements)

All master's degree-seeking students must:

- Complete the school-wide core courses required for their program, and complete and submit the thesis or essay
- Fulfill the program's core course requirements, including required courses, and any field work, and examinations
- Register for two terms of Public Health Grand Rounds
- Complete the online Academic Integrity Module in the first semester
- Submit a master's thesis or essay

Thesis or Essay

All master's students must complete a minimum of two essay/special study credits and meet the master's thesis/essay requirement. Program listings will specify the type of master's paper required. The form of the essay or thesis must be in accord with specifications stipulated in the University's Style and Form Manual or the ETD Format Guidelines Manual. The electronic copy of the thesis/essay must be uploaded and all required paperwork submitted to Joanne Pegher by the deadline posted for that graduation term.

MPH students who have been permitted to submit an article accepted for publication in lieu of the essay must meet the margin requirements and submit a committee signature sheet and title page patterned after that in the Style and Form Manual or the ETD Format Guidelines Manual. If there are multiple authors, a statement should be included explaining the role of each author. All essays must be read and approved by two faculty representing two different University of Pittsburgh Pitt Public Health departments. MS theses require approval by three readers.

Requirements for the MHA/MBA Degree:

An outstanding opportunity to become highly skilled in the management of health care processes, quality, and finances, the MHA/MBA joint degree program is designed to create future leaders in the management of health care organizations. Uniting the strengths of the University of Pittsburgh's Graduate School of Public Health and Joseph M. Katz Graduate School of Business, the program blends outstanding training in management and finance with the content expertise in health care quality improvement, outcomes measurement, and analytics.

Our highly trained graduates will be fully prepared to assume fast-track leadership positions in a variety of health care organizations. The Bureau of Labor Statistics estimates that the demand for health care managers will grow by 17 percent in the next decade. The U.S. health care system is the largest industry in the United States, currently consuming nearly 18 percent of GDP. At the same time, there remain significant problems with access and quality. The joint training in business and health care management should provide a strong foundation for a variety of positions in health care finance, insurance, operations, disease and population health management.

The standard full-time curriculum is a three-year, 78-credit course of study leading to the joint degree. The competency-based curriculum emphasizes both professional and leadership development, as well as functional management skills, blending courses across both the Katz School (MBA) and Pitt Public Health's Department of Health Policy and Management (MHA) in six academic terms.
Students are required to complete a management residency in the first summer term that may be extended into the second summer term. These supervised placements in health care services or health-related practice sites are an invaluable experience for professional development and networking. The student must also complete a master's essay and an applied management project at the residency site.

MHA/MBA Curriculum

Admissions

Students must complete applications for, and be accepted into, both the Graduate School of Public Health and the Joseph M. Katz Graduate School of Business. Application to Pitt Public Health must be submitted through SOPHAS at www.sophas.org. Application to the Katz Graduate School of Business should be made at www.business.pitt.edu/katz/apply.

Health Policy and Management, MHA

Required Public Health Core Courses

- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING
- HIM 1405 - MEDICAL TERMINOLOGY LAB
- HPM 2010 - ORGANIZATION STUDIES: THEORY AND APPLICATIONS TO HEALTH CARE SYSTEMS
- HPM 2012 - FINANCIAL MANAGEMENT FOUNDATIONS HEALTH CARE AND PUBLIC HEALTH
- HPM 2014 - APPLICATIONS AND ISSUES IN FINANCIAL MANAGEMENT OF HEALTH CARE INSTITUTIONS
- HPM 2017 - QUANTITATIVE METHODS: DECISION TECHNOLOGIES AND OPERATIONS MANAGEMENT IN HEALTH CARE
- HPM 2028 - MICROECONOMICS APPLIED TO HEALTH
- HPM 2029 - HEALTH MANAGEMENT INFORMATION SYSTEMS
- HPM 2037 - ESSAY-HA
- HPM 2049 - HUMAN RESOURCES MANAGEMENT FOR HEALTH CARE AND PUBLIC HEALTH PROFESSIONALS
- HPM 2105 - INTRODUCTION TO THE US HEALTHCARE DELIVERY SYSTEM 1
- HPM 2106 - HEALTH SYSTEMS LEADERSHIP AND PROFESSIONAL DEVELOPMENT 2
- HPM 2108 - LEADERSHIP, PROFESSIONALISM AND CAREER DEVELOPMENT
- HPM 2115 - HEALTH POLICY AND MANAGEMENT RESIDENCY
- HPM 2130 - HEALTH LAW AND ETHICS
- HPM 2141 - MANAGERIAL EPIDEMIOLOGY
- HPM 2145 - MARKETING HEALTH SERVICES STRATEGY AND BUSINESS PLANS
- HPM 2150 - STRATEGIC MANAGEMENT OF HEALTH SERVICE ORGANIZATIONS
- HPM 2207 - QUALITY ASSESSMENT AND PATIENT SAFETY
- HPM 2216 - HEALTH INSURANCE: FINANCING HEALTH CARE
- HPM 2220 - COST EFFECTIVENESS ANALYSIS HEALTH CARE
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS

*Must register for two terms

General Requirements for Master's Degrees

(Note: This is not a complete list of requirements)

All master's degree-seeking students must:

- Complete the school-wide core courses required for their program, and complete and submit the thesis or essay
- Fulfill the program's core course requirements, including required courses, and any field work, and examinations
- Register for two terms of Public Health Grand Rounds
- Complete the online Academic Integrity Module in the first semester
- Submit a master's thesis or essay
Thesis or Essay

All master's students must complete a minimum of two essay/special study credits and meet the master's thesis/essay requirement. Program listings will specify the type of master's paper required. The form of the essay or thesis must be in accord with specifications stipulated in the University's Style and Form Manual or the ETD Format Guidelines Manual. The electronic copy of the thesis/essay must be uploaded and all required paperwork submitted to Joanne Pegher by the deadline posted for that graduation term.

MPH students who have been permitted to submit an article accepted for publication in lieu of the essay must meet the margin requirements and submit a committee signature sheet and title page patterned after that in the Style and Form Manual or the ETD Format Guidelines Manual. If there are multiple authors, a statement should be included explaining the role of each author. All essays must be read and approved by two faculty representing two different University of Pittsburgh Pitt Public Health departments. MS theses require approval by three readers.

Requirements for the MHA Degree:

The MHA program offers students a competency-based curriculum and an array of professional development resources and activities to prepare graduates for managerial roles in health care systems and networks, managed care, health insurance, and long-term care organizations. The broad curriculum provides students with a foundation of knowledge, analytical and communication skills, and core values for ongoing career growth and professional and leadership development. Upon completion of the MHA program, our graduates obtain post-graduate fellowships or full-time employment in hospitals, academic medical centers, physician practices, long-term care facilities, health plans, and consulting firms.

The mission of the Masters in Health Administration (MHA) Program is to provide students with the competencies necessary for early to mid-level management positions and provide the foundation for subsequent professional development, leadership and executive management in organizations involved in the delivery or financing of health care services. The program's curriculum is based on evidence-based practice enriched by the research activity of the faculty.

In order to be eligible for graduation, students must complete 60 credit hours with a B average or better including a supervised management residency, which is typically scheduled during the summer term, and prepare a scholarly master's essay relating to the culminating experience. The curriculum includes select Pitt Public Health core courses, the required health management core, and elective credits offered within and outside the schools of the health sciences.

MHA Curriculum

Health Policy and Management, MPH

Program Requirements

MPH students must complete the prescribed coursework. In addition, they must complete a capstone intellectual product (master's essay) under the guidance of a faculty committee and register for a practicum experience. Students will take the school-wide core courses as part of the required credits to complete their degree. The curriculum consists of 45 credits typically completed over two years.

Pitt Public Health Core Requirements

- BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING
*Students must take either BIOST 2011 or BIOST 2041
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS I
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
HPM Core Requirements

- HPM 2025 - HPM PRACTICUM
- HPM 2028 - MICROECONOMICS APPLIED TO HEALTH
- HPM 2037 - ESSAY-HA
- HPM 2055 - MANAGING HEALTH PROGRAMS AND PROJECTS
- HPM 2063 - THE POLITICS OF HEALTH POLICY
- HPM 2064 - HEALTH POLICY ANALYSIS
- HPM 2105 - INTRODUCTION TO THE US HEALTHCARE DELIVERY SYSTEM 1
- HPM 2106 - HEALTH SYSTEMS LEADERSHIP AND PROFESSIONAL DEVELOPMENT 2
- HPM 2108 - LEADERSHIP, PROFESSIONALISM AND CAREER DEVELOPMENT
- HPM 2112 - FINANCIAL MANAGEMENT FOUNDATIONS HEALTH CARE AND PUBLIC HEALTH
- HPM 2131 - PUBLIC HEALTH LAW AND ETHICS
- HPM 2120 - COST EFFECTIVENESS ANALYSIS HEALTH CARE

General Requirements for Master's Degrees

(Note: This is not a complete list of requirements)

All master's degree-seeking students must:

- Complete the school-wide core courses required for their program, and complete and submit the thesis or essay
- Fulfill the program's core course requirements, including required courses, and any field work, and examinations
- Register for two terms of Public Health Grand Rounds
- Complete the online Academic Integrity Module in the first semester
- Submit a master's thesis or essay

Thesis or Essay

All master's students must complete a minimum of two essay/special study credits and meet the master's thesis/essay requirement. Program listings will specify the type of master's paper required. The form of the essay or thesis must be in accord with specifications stipulated in the University's Style and Form Manual or the ETD Format Guidelines Manual. The electronic copy of the thesis/essay must be uploaded and all required paperwork submitted to Joanne Pegher by the deadline posted for that graduation term.

MPH students who have been permitted to submit an article accepted for publication in lieu of the essay must meet the margin requirements and submit a committee signature sheet and title page patterned after that in the Style and Form Manual or the ETD Format Guidelines Manual. If there are multiple authors, a statement should be included explaining the role of each author. All essays must be read and approved by two faculty representing two different University of Pittsburgh Pitt Public Health departments. MS theses require approval by three readers.

Requirements for the MPH Degree:

The MPH in Health Policy and Management (HPM) prepares students for careers as public policy analysts, advocates for public health and high quality care, and professionals engaged in the development and implementation of health policies. The program provides professional development through a combination of coursework, a health policy or management related practicum, a Public Health Leader-in-Residence, and other curricular activities.
This two-year, 45-credit Program prepares students for careers in both health policy development, analysis and advocacy and program and organization management in public health agencies, foundations, other nonprofits and the private sector. Graduates of our MPH Program should be well-prepared to pass the Certification in Public Health (CPH) exam, pursue related Doctoral studies and/or obtain professional employment in public health and related sectors, nationally and globally.

In order to be eligible for graduation, students must complete 45 credit hours with a B average or better including a supervised practicum, and prepare a scholarly master's essay relating to culminating experience. The curriculum includes the GSPH core courses, the required MPH core and elective courses offered within and outside of the schools of health sciences.

MPH Curriculum

Health Services Research and Policy, MS

Required Public Health Core Courses

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- BIOST 2049 - APPLIED REGRESSION ANALYSIS
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- HPM 2905 - QUASI-EXPERIMENTAL DESIGN FOR HEALTH SERVICES RESEARCH
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
- HPM 3508 - RESEARCH AND DISSERTATION PHD

Decision Sciences Area of Emphasis Courses

- BIOST 2090 - SPECIAL TOPICS 3
- HPM 2217 - CLINICAL DECISION ANALYSIS
- HPM 2220 - COST EFFECTIVENESS ANALYSIS HEALTH CARE
- IE 2086 - DECISION MODELS

Decision Sciences Suggested Elective Courses

- IE 2001 - OPERATIONS RESEARCH
- CLRES 2023 - SURVIVAL ANALYSIS
- CLRES 2026 - ANALYSIS OF CORRELATED DATA
- CLRES 2107 - COMPARATIVE EFFECTIVENESS RESEARCH AND PCOR
- CLRES 2813 - CLINICAL ENVIRONMENTS IN BIOMEDICAL INFORMATICS
- HPM 2215 - COMPUTER METHODS IN DECISION AND COST-EFFECTIVENESS ANALYSIS
- HPM 3501 - SEMINAR IN HEALTH SERVICES RESEARCH METHODS 1
- IE 2188 - SIMULATION MODELING AND APPLICATIONS

Health Policy and Economics Area of Emphasis Courses

- CLRES 2107 - COMPARATIVE EFFECTIVENESS RESEARCH AND PCOR
- HPM 2028 - MICROECONOMICS APPLIED TO HEALTH
- HPM 2220 - COST EFFECTIVENESS ANALYSIS HEALTH CARE
- HPM 2064 - HEALTH POLICY ANALYSIS
- HPM 2216 - HEALTH INSURANCE: FINANCING HEALTH CARE

Health Policy and Economics Suggested Electives Courses
BCHS 2520 - THEORIES OF HEALTH BEHAVIOR AND HEALTH EDUCATION
BCHS 3002 - HEALTH SURVEY METHODS
BIOST 2046 - ANALYSIS OF COHORT STUDIES
HPM 3125 - INTERMEDIATE HEALTH ECONOMICS
HPM 3501 - SEMINAR IN HEALTH SERVICES RESEARCH METHODS I
HPM 3505 - ADVANCED EMPIRICAL MICROECONOMICS METHODS WITH APPLICATIONS FOR HEALTHCARE RESEARCH
PIA 2028 - PUBLIC POLICY ANALYSIS
PIA 2117 - PROGRAM EVALUATION
PIA 2133 - ADVANCED SEMINAR: IN SYSTEMS THINKING AND PUBLIC POLICY

General Requirements for Master's Degrees

(Note: This is not a complete list of requirements)

All master's degree-seeking students must:

- Complete the school-wide core courses required for their program, and complete and submit the thesis or essay
- Fulfill the program's core course requirements, including required courses, and any field work, and examinations
- Register for two terms of Public Health Grand Rounds
- Complete the online Academic Integrity Module in the first semester
- Submit a master's thesis or essay

Thesis or Essay

All master's students must complete a minimum of two essay/special study credits and meet the master's thesis/essay requirement. Program listings will specify the type of master's paper required. The form of the essay or thesis must be in accord with specifications stipulated in the University's Style and Form Manual or the ETD Format Guidelines Manual. The electronic copy of the thesis/essay must be uploaded and all required paperwork submitted to Joanne Pegher by the deadline posted for that graduation term.

MPH students who have been permitted to submit an article accepted for publication in lieu of the essay must meet the margin requirements and submit a committee signature sheet and title page patterned after that in the Style and Form Manual or the ETD Format Guidelines Manual. If there are multiple authors, a statement should be included explaining the role of each author. All essays must be read and approved by two faculty representing two different University of Pittsburgh Pitt Public Health departments. MS theses require approval by three readers.

Requirements for the MS Degree:

The Master of Science in Health Services Research and Policy program prepares graduates for positions in health services research and policy, analytics and also prepares them for higher level education (such as a PhD). Graduates will be prepared to conduct research on policy issues affecting the organization, financing, and delivery of health care and public health services.

The MS requires a minimum of 42 credits. The program includes coursework in statistics and research methods as well as foundations in public health. Students must successfully pass a comprehensive exam given during the second year and submit and successfully defend a master's thesis.

MS Decision Sciences Area of Emphasis

MS Health Policy and Economics Area of Emphasis

Health Care Systems Engineering Certificate

Offered jointly by the University of Pittsburgh Swanson School of Engineering and Pitt Public Health, this program provides students with specific competencies and analytical tools required for effective problem solving relevant to quality improvement and process engineering in the health care industry. Students are equipped to serve as quality champions and agents of change in addressing the challenges health care faces in the twenty-first century. Engineering students gain knowledge of health care operations, the organizational culture, and the strategic issues facing the industry. Health
care management students will learn engineering principles, models, and tools within a systems approach to analysis, problem-solving, and project implementation.

This certificate is intended for individuals pursuing careers in the management, redesign, and improvement of the health care industry. Designed for master's students in the Department of Health Policy and Management and the Department of Industrial Engineering, this program provides a rigorous and multidisciplinary education as a complement to the core curriculum of both programs. With a focus on innovation, effectiveness, and efficiency in health care and public health, the certificate nurtures well-educated professionals and leaders in their disciplines.

Students in this certificate program will be able to:

- Demonstrate knowledge of the structures, performance, quality, policy and environmental context of health and health care to formulated solutions for health policy problems,
- Design and implement projects, including collecting, analyzing, interpreting data and offering sound evidence-based recommendations, and
- Summarize and present health care engineering-related research orally and in writing.

**Required Courses**

- IE 2000 - FUNDAMNTLS OF INDUSTRIAL ENGR
- IE 2001 - OPERATIONS RESEARCH
- BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING
  or
- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- HPM 2105 - INTRODUCTION TO THE US HEALTHCARE DELIVERY SYSTEM 1
- HPM 2106 - HEALTH SYSTEMS LEADERSHIP AND PROFESSIONAL DEVELOPMENT 2
- HPM 2207 - QUALITY ASSESSMENT AND PATIENT SAFETY
- HPM 2050 - HEALTH SYSTEMS ENGINEERING SEMINAR
- HPM 2017 - QUANTITATIVE METHODS: DECISION TECHNOLOGIES AND OPERATIONS MANAGEMENT IN HEALTH CARE
- HPM 2220 - COST EFFECTIVENESS ANALYSIS HEALTH CARE
- IE 2102 - LEAN SIX SIGMA I (GREEN BELT)
- IE 2106 - OPERATIONS IMPROVEMENT IN HEALTHCARE
  or
- IE 2076 - TOTAL QUALITY MANAGEMENT
- IE 2998 - GRADUATE PROJECTS/PRACTICUM

**Health Systems Leadership and Management Certificate**

**General Requirements**

This graduate certificate provides rigorous training for health care clinicians and providers looking to enhance their careers and improve health care delivery through strengthened leadership and management skills. The certificate was initially designed for physicians in the School of Medicine, but is open to all health care clinicians and providers.

The admission requirements for applicants are based on completion of at least an advanced health care provider degree (e.g. MD, RN, PharmD, PT, OT), job experience, and career plans.

The curriculum requires 15-16 total credits and consists of coursework in leadership theory and practice; strategic management; financial management; health policy; quality and patient safety; and one applied project.

**Required Courses**

- HPM 2012 - FINANCIAL MANAGEMENT FOUNDATIONS HEALTH CARE AND PUBLIC HEALTH
  or
- HPM 2014 - APPLICATIONS AND ISSUES IN FINANCIAL MANAGEMENT OF HEALTH CARE INSTITUTIONS
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
Department of Human Genetics

The Department of Human Genetics provides graduate training in the fields of human genetics, public health genetics, and genetic counseling. The mission of the department is to discover new knowledge about the genetic determinants of human health and disease through basic and applied research; to educate students, trainees, and other interested persons in that knowledge; and to apply that knowledge to improve the health of populations, families, and patients.

Contact Information

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Department Office: 3102C Parran Hall
412-624-3066
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http://publichealth.pitt.edu/hugen

Admission

In addition to meeting the Graduate School of Public Health's general admission requirements, applicants to the MS and PhD programs should have completed courses in calculus and genetics. For the Genetic Counseling program, the preferred undergraduate background includes courses in each of the following: genetics, organic chemistry-general biochemistry, calculus, statistics, and a behavioral or social science. In some cases, deficiencies can be made up after admission. For applicants to the MPH program, these courses are suggested but not required. For information on admission and registration contact the Department of Human Genetics at 412-624-3066 or nce@pitt.edu.

Financial Assistance

Financial aid in the form of graduate student assistantships is often available for PhD students. For other degree programs, aid is not usually available, although it is often possible to arrange for hourly wage/stipend support from research mentors or other faculty.

Major Educational Areas and Programs

Courses offered by the department address the areas of human population and quantitative genetics, biochemical and molecular genetics, cytogenetics, bioinformatics, genome sequence analysis, public health genetics, and genetic counseling. In addition, courses aimed at genetic counseling students provide training in clinical genetics, cytogenetics/molecular diagnostics techniques, risk communication, counseling, and ethics.

The principle objective of the courses in human genetics is to train students to critically examine the role of genes and genetic variation in determining the distribution of health and disease in the general population.

To achieve this objective, training is provided in both experimental and statistical approaches to the direct detection or estimation of the impact of genes on the health of individuals, families and populations. Such approaches include the evaluation of the relative roles of genetic and
environmental factors and their interaction in determining the distribution of disease in the population. The department offers degree programs in three areas: human genetics (MS, PhD), genetic counseling (MS), and Public Health Genetics (MPH)

Human Genetics-PhD and MS

This area is concerned with the study of the mechanisms of genetic variability and its impact on health at the individual and population level. An important component is the study of the fraction of genetic variability that leads directly to disease or determines an individual's susceptibility to diseases caused by pathogens or adverse environments.

A PhD track in human genetics with an emphasis on genetic counseling is available to applicants with three to five years of work experience as a genetic counselor and who are certified in genetic counseling by the American Board of Genetic Counseling (ABGC) or the American Board of Medical Genetics (ABMG).

Genetic Counseling-MS

The objectives of the program are:

- To provide a balanced program of study integrating courses in molecular genetics, medical genetics, and psychosocial and multicultural counseling including biomedical ethics.
- To provide extensive direct patient contact experience in a variety of clinical placements so that the student gains an appreciation of how the practicing genetic counselor functions in different work settings.
- To prepare students at the Master of Science level for entering the profession of genetic counseling and assuming the role of a professional in medical, research, and academic settings.

This is a full-time, two-year program. Course work occurs in the first year and is followed by a ten-month clinical rotation at nearby hospitals. The clinical internship involves laboratory experience and direct patient contact.

Public Health Genetics-MPH

The MPH program integrates genetics and the public health science disciplines of epidemiology, biostatistics, environmental health, and health services research, focusing on phenotypic disease prevention in populations.

Research

Research in the Department of Human Genetics includes studies of basic genetic mechanisms of segregation and recombination; family and population studies of normal and disease phenotypes; chromosome structure and chromosomal mechanisms in disease; physical and genetic mapping of genes; interaction of genes with the environment; bioinformatics and sequence analysis; assessment of genetic risk; community outreach regarding genetics; educational projects for the public health care professionals; the process of genetic counseling including decision making, communication, and satisfaction with clinical service; and the detection of genetic disease. Application of this research is explored with research in ethics, genetic counseling and screening. The focus of faculty research is on human genetics but includes experimental studies in appropriate non-human animals and methodological work in statistical genetics.

Human Genetics, PhD

The doctoral program in human genetics prepares students for careers leading genetics and genomics research in academia or industry. The flexible curriculum provides a broad background in the field while allowing customized emphasis on molecular genetics/genomics, statistical genetics and genetic epidemiology, or genetic counseling. Typically four to ten doctoral students are admitted each year, including external applicants and internal applicants currently pursuing Master's degrees within the department. In addition to core coursework and advanced classes in a chosen area of concentration, doctoral students pursue mentored research projects culminating in the production and defense of a dissertation.

AREAS OF STRENGTH
The doctoral program offers training in molecular genetics, statistical genetics and genetic epidemiology, and genetic counseling. This includes advanced coursework and outside-of-the-classroom training and research experiences. For example, during the second year and beyond, doctoral students will choose advanced courses in Human Genetics and elective courses across the Schools of the Health Sciences pertaining to their area of interest. Across all years, students will participate in workshops, laboratory meetings, and scientific conferences, and attend seminars offered to the University community, that enhance knowledge and skills in their chosen area of study. Research experiences including dissertation research will provide in-depth, hands-on training in the chosen area.

Students entering the doctoral program can tailor their training based on their research interests and career goals:

**Molecular Genetics**

Students pursuing training in molecular genetics or cytogenetics will carry out research projects performing benchtop experimental studies in laboratories within the department or across the Schools of the Health Sciences. Students can further customize their training by choosing among many elective courses in Cell Biology and Molecular Physiology, Cellular and Molecular Pathology, Immunology, Molecular Genetics and Developmental Biology, Molecular Pharmacology, and Molecular Virology and Microbiology.

**Statistical Genetics and Epidemiology**

Students pursuing training in statistical genetics and genetic epidemiology will carry out applied analysis or methodological research projects related to clinical or epidemiological studies. Students will work as members of statistical and computational research groups within the department or across the School of the Health Sciences. Students can further customize their training by choosing advanced coursework in Biostatistics, Biomedical Informatics, Computational and Systems Biology, and Epidemiology.

**Genetic Counseling**

Students holding a MS-GC degree who wish to pursue a doctoral degree with a focus in genetic counseling will carry out original research in their area(s) of interest. In addition to addressing basic science or clinical research questions, students' projects will explore the medical, psychological, and familial implications of genetic contributors to human health and disease. Students can further customize their training by choosing elective courses from across the Schools of the Health Sciences in consultation with the Director and Assistant Director of the Genetic Counseling Program.

**DOCTORAL COMPETENCIES**

The goal of the doctoral program is to prepare students for careers leading genetics and genomics research in academia or industry. Toward this end, students will gain proficiency in the knowledge, skills, and abilities required to begin a career as an independent scientist. These educational goals are organized into eight doctoral program competencies. After successful completion of the doctoral program, students will be able to:

- Describe basic genetic mechanisms and how they affect proteins, chromosomes, cells, individuals, and populations of organisms in normal and disease states
- Describe mechanisms by which genes and the environment interact to affect the distribution of health and disease in human populations
- Demonstrate familiarity with a broad range of molecular, clinical, and analytical methodologies for genetic studies, and demonstrate mastery of a substantial subset of methods
- Analyze published research in human genetics at the level needed for effective research and teaching
- Use their in-depth experience with a specific research project in genetics to generate and test research hypotheses, design experiments, analyze data, and interpret research results
- Communicate their own research ideas and results, orally and in publishable written form
- Apply fundamental principles of grant-writing
- Apply fundamental principles of laboratory and research program management, and of ethical practice

**Required Human Genetics Courses**

**COURSEWORK**

Coursework for doctoral students is typically undertaken during the first two years in the program, although advanced courses may be taken in later years. All doctoral students will complete the four core Human Genetics courses as well as the core Public Health curriculum. Advanced courses offered through Human Genetics and other departments will provide students instruction in their chosen area of concentration. Certificate programs offered through the Graduate School of Public Health can be pursued to further customize the education of doctoral students.
A minimum of 72 credits is required.

- HUGEN 2010 - BIOINFORMATIC RESOURCES FOR GENETICISTS
- HUGEN 2011 - SCIENTIFIC WRITING IN HUMAN GENETICS
- HUGEN 2022 - HUMAN POPULATION GENETICS
- HUGEN 2025 - HUMAN GENETICS SEMINAR
  (must be taken four times)
- HUGEN 2028 - HUMAN GENETICS JOURNAL CLUB AND PEER REVIEW
- HUGEN 2031 - CHROMOSOMES AND HUMAN DISEASE
- HUGEN 2034 - BIOCHEMICAL AND MOLECULAR GENETICS OF COMPLEX DISEASES
- HUGEN 2040 - MOLECULAR BASIS OF HUMAN INHERITED DISEASE

Human Genetics Research Credits, under one or both of the following course designations:

- HUGEN 2021 - SPECIAL STUDIES Variable
- HUGEN 3010 - RESEARCH AND DISSERTATION PH.D. Variable

*In addition, two advanced courses are required. Students may select another advanced course with permission of the Graduate Director.

Advanced Human Genetics Courses
- HUGEN 2029 - INTRODUCTION TO GENE MAPPING
- HUGEN 2051 - INBORN ERRORS OF DEVELOPMENT
- HUGEN 2070 - BIOINFORMATICS FOR HUMAN GENETICS
- HUGEN 2080 - STATISTICAL GENETICS

School Core Course Requirements

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
  (must be taken for the first two semesters)
- PUBHLT 2030 - RESEARCH ETHICS AND THE RESPONSIBLE CONDUCT OF RESEARCH

Genetic Counseling and Public Health Genetics Dual-Degree Program, MS/MPH

The University of Pittsburgh established the MPH in Public Health Genetics and MS in Genetic Counseling dual degree program in 2004, which was the first program of its kind to be offered to students pursuing a genetic counseling degree. The dual degree program enables students to build upon the clinical skills that they acquire through the Genetic Counseling Program to understand the importance of genetics, genomics, and genetic counseling in the field of public health.

Given the rapid expansion of available genetic and genomic testing, the current focus on precision medicine, and the increasing interest of national organizations, state public health offices, and hospitals in the application of genomics to public health, there is a growing need for professionals with skills in both disciplines. Graduates of the dual degree program are well-prepared to integrate public health genetics into clinical, research, public health, and industry settings. The dual degree program also benefits students by broadening their areas of expertise and career qualifications in other areas of public health including program development, evaluation, and policy.

There are a variety of options for completing the dual degree, which depend in part on the timing of the student entering the program. However, most students are able to complete the dual degree program in 22 months, which is one additional summer session beyond the typical completion time for the MS in Genetic Counseling degree program. Schedules are discussed on an individual basis with the Program Directors of the MPH in Public Health Genetics and MS in Genetic Counseling Programs.

More information regarding the program can be found on the Pitt Public Health website, Human Genetics designation, under Dual MPH/MS Genetic Counseling Program.

Dual-Degree Course Requirements
Students interested in both genetic counseling and public health genetics can pursue both degrees in a combined 62-credit program. All requirements for each individual program must be completed.

All required courses for both degrees must be taken by dual degree students, with the exception of PUBHLT 2011, Essentials of Public Health. Given that some of the curriculum overlaps, the dual degree requires the completion of 62 credits. In addition to completing the course requirements (listed below), students enrolled in the dual degree program must fulfill the MPH practicum, MPH essay, and MS thesis requirements.

**Required Human Genetics Courses**

- HUGEN 2010 - BIOINFORMATIC RESOURCES FOR GENETICISTS
- HUGEN 2011 - SCIENTIFIC WRITING IN HUMAN GENETICS
- HUGEN 2022 - HUMAN POPULATION GENETICS
- HUGEN 2025 - HUMAN GENETICS SEMINAR
  (Must be taken two times)
- HUGEN 2031 - CHROMOSOMES AND HUMAN DISEASE
- HUGEN 2032 - GENETIC TECHNIQUES
- HUGEN 2034 - BIOCHEMICAL AND MOLECULAR GENETICS OF COMPLEX DISEASES
- HUGEN 2035 - PRINCIPLES OF GENETIC COUNSELING
- HUGEN 2036 - GENETIC COUNSELING INTERNSHIP
- HUGEN 2038 - INTERVENTION SKILLS FOR GENETIC COUNSELING
- HUGEN 2039 - RISK CALCULATION GENETIC COUNSELING
- HUGEN 2040 - MOLECULAR BASIS OF HUMAN INHERITED DISEASE
- HUGEN 2047 - CLINICAL GENETICS CASE CONFERENCE
- HUGEN 2049 - INTRODUCTION PUBLIC HEALTH GENETICS
- HUGEN 2050 - PUBLIC HEALTH GENETICS PRACTICUM
- HUGEN 2052 - ETHICAL ISSUES IN CLINICAL AND PUBLIC HEALTH GENETICS
- HUGEN 2053 - APPLICATIONS IN PUBLIC HEALTH GENETICS AND GENOMICS

**School Core Course Requirements**

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY

(Students in the Public Health Genetics program with adequate prior background may apply to be exempted from the requirement to take PUBHLT 2015. Most students do this)

- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
  (Must be taken for the first two semesters)
- PUBHLT 2033 - FOUNDATIONS IN PUBLIC HEALTH
- PUBHLT 2034 - PUBLIC HEALTH COMMUNICATIONS
- PUBHLT 2035 - APPLICATIONS IN PUBLIC HEALTH

**Thesis and Essay**

Students in the dual degree program will complete both the thesis requirement for the MS in Genetic Counseling degree and the Essay requirement for the MPH in Public Health Genetics degree. Depending on the thesis and essay topics, often these documents can be combined into one document comprising the student's thesis project with additional background on public health genetics relevance and, at least, one additional, extensive chapter focusing on an application of public health genetics. The student's thesis committee and the Program Director for the MPH in Public Health Genetics will work with the student to identify the additional components or topics that are needed to satisfy the MPH Essay requirement.
Human Genetics and Medicine, PhD/MD

The joint MD/PhD program is a unique arrangement between the Department of Human Genetics and the Medical Scientist Training Program (MSTP), a collaboration between the University of Pittsburgh and Carnegie Mellon University. The program provides the opportunity for students to undertake a physician-scientist training program tailored to specific research interests, provided by the wide range of research that primary and secondary Human Genetics faculty are involved in within Pitt Public Health and the University of Pittsburgh School of Medicine.

Students in this program begin by completing two years of the MD program in the School of Medicine. Then they come to Pitt Public Health for three years to complete the PhD program. Students then return to the School of Medicine to finish the last two years of medical training.

The required core curriculum for the joint PhD/MD program is the same as the requirements for the PhD in Human Genetics.

Genetic Counseling, MS

The Genetic Counseling Graduate Program at the University of Pittsburgh is committed to providing cutting edge training in the complex science of genetics while fostering a strong foundation in counseling. This unique program is constantly evolving to ensure the continued success of graduates entering a dynamic workforce. Each year between 10 and 12 students are welcomed into the incoming class to be trained by world-renowned faculty. The Genetic Counseling Program is grounded in three important elements: scientific training in human genetics and genomics, comprehensive clinical experience, and understanding the psychological and social aspects of counseling--with an added focus on integrating up to the minute discoveries in genetics and genomics as well as valuable concepts from other academic disciplines.

The Genetic Counseling Program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC). Our comprehensive program helps students to achieve and often surpass the practice based competencies outlined by the ACGC.

Please explore our website at Pitt Public Health under the Human Genetics designation to learn more about what sets our program and our graduates apart! We hope you will consider joining our challenging and exciting program.

VISION

Our graduates will be leaders at the center of health care in a future where every health decision will be influenced by genomic information.

MISSION STATEMENT

We deliver boundary-spanning education for future genetic counseling professionals in genomics, public health, business and policy, and through immersion in diverse health care and research settings.

CORE VALUES

The University of Pittsburgh Genetic Counseling Program's core values are:

- **Speak with Integrity and Compassion** - We are committed to honesty, transparency and respect in every interaction.
- **Commit Everyday** - We take personal responsibility to achieve excellence in everything we do.
- **Reach Out** - We embrace collaboration and partnership to enhance professional possibilities
- **Embrace the Unknown** - We believe that curiosity leads to lifelong learning.
- **Be Bold** - We are inspired by innovation and change.

Required Human Genetics Courses

A minimum total of 38 credits is required for the M.S. in Genetic Counseling.
School Core Course Requirements

- **BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1**
- **EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY**
- **PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH**
- **PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS**

Clinical Rotations

Genetic counseling students have the opportunity to participate in patient care at world-renowned medical facilities. They typically see 200 cases or more and are exposed to a variety of genetic referral types as well as diverse medical systems.

The rotation schedule is divided into 13 blocks, with each block lasting three weeks. All students will spend three blocks in Cancer genetics, three blocks in Prenatal genetics, three blocks in Pediatric genetics, one block in Adult/Subspecialty genetics, one block in research / Center for Advanced Fetal Diagnostics and one block in primary care. In addition, students spend three to four weeks (one block) at an optional rotation site. This allows students the opportunity to select specific training experiences to develop a higher level of expertise based on their interests.

Thesis Project

Designing, conducting, and interpreting research studies are important skills for success as a genetic counselor. The completion of a thesis project is an integral component of a student's education in the Pitt Genetic Counseling Program. The thesis project allows students to understand the research process, develop their research skills, and collaborate with faculty across diverse disciplines.

Students are encouraged to develop a project according to their interests and research goals. Many previous students have published their thesis projects in peer-reviewed journals and have presented their research at conferences both nationally and internationally.

Human Genetics, MS

The Master of Science program in human genetics prepares students for careers as contributing members of genetics and genomics research teams in academia or industry. Graduates of the program often go on to PhD level study and become independent scientists. The flexible curriculum provides a broad background in the field while allowing customized emphasis on laboratory genetics or genetic data analysis. In addition to core coursework and advanced classes in a chosen area of concentration, MS students pursue mentored research projects culminating in the production and defense of a thesis.
MS Program Requirements

COMPETENCIES

The goal of the Master of Science program is to prepare students for careers as contributing members of genetics and genomics research teams in academia or industry. Toward this end, students will gain proficiency in the knowledge, skills, and abilities required to begin a career as a scientist. These educational goals are organized into six MS program competencies. After successful completion of the Master of Science program, students will be able to:

- Describe basic genetic mechanisms and how they affect proteins, chromosomes, cells, individuals, and populations of organisms in normal and disease states
- Describe mechanisms by which genes and the environment interact to affect the distribution of health and disease in human populations
- Demonstrate familiarity with a broad range of molecular, clinical, and analytical methodologies for genetic studies, and demonstrate mastery of a subset of methods
- Analyze published research in human genetics
- Use their in-depth experience with a specific research project in genetics to generate and test research hypotheses, design experiments, analyze data, and interpret research results
- Summarize and present a research project orally and in writing

COURSEWORK

Coursework for MS students is typically undertaken during the first year in the program, although advanced courses may be taken in the second year. All MS students will complete the core Human Genetics courses as well as the core Public Health curriculum. Advanced courses offered through Human Genetics and other departments will provide students instruction in their chosen area of concentration. Certificate programs offered through the Graduate School of Public Health can be pursued to further customize the education of MS students.

Required Human Genetics Courses

- HUGEN 2010 - BIOINFORMATIC RESOURCES FOR GENETICISTS
- HUGEN 2011 - SCIENTIFIC WRITING IN HUMAN GENETICS
- HUGEN 2022 - HUMAN POPULATION GENETICS
- HUGEN 2025 - HUMAN GENETICS SEMINAR
  (must be taken two times)
- HUGEN 2028 - HUMAN GENETICS JOURNAL CLUB AND PEER REVIEW
- HUGEN 2031 - CHROMOSOMES AND HUMAN DISEASE
- HUGEN 2034 - BIOCHEMICAL AND MOLECULAR GENETICS OF COMPLEX DISEASES
- HUGEN 2040 - MOLECULAR BASIS OF HUMAN INHERITED DISEASE

School Core Course Requirements

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BIOST 2042 - INTRODUCTION TO STATISTICAL METHODS 2
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- PUBHLT 2011 - ESSENTIALS OF PUBLIC HEALTH
- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS
  (must be taken for the first two semesters)
- PUBHLT 2030 - RESEARCH ETHICS AND THE RESPONSIBLE CONDUCT OF RESEARCH

Public Health Genetics, MPH
This MPH program integrates genetics and the public health science disciplines of epidemiology, pathobiology, biostatistics, environmental health, and health services research, with ethics, social sciences, public affairs, economics and law. Public health genetics focuses on phenotypic disease prevention in populations, not just individual patients and their families. It addresses society's legal, ethical, financial, regulatory, and organizational responsibilities in offering genetic services, and devising environmental and occupational interventions to prevent disease in populations.

MPH Requirements

The MPH in Public Health Genetics curriculum is designed to give students a strong knowledge base in Human Genetics with a broad understanding of the field of public health. Through the coursework, students are immersed in current topics in human genetics, public health, and the ethical, legal and social issues important to the field of public health genetics. The curriculum, practicum experience, and public health essay focus on the development of skills that are desirable to employers after graduation including critical thinking, scientific writing, and statistical analysis.

A minimum of 47 credits is required for the M.P.H. This total is made up of public health core courses, a core of required courses in the department of Human Genetics, and electives relevant to the student's program goals. The entire program can be completed in 1 1/2 years, although most students prefer to spread it out over two years. There is also the option to complete the program on a part-time basis.

The MPH in Public Health Genetics course schedule can be customized to meet individual student goals, interests, and circumstances.

Required Human Genetics Courses

- HUGEN 2010 - BIOINFORMATIC RESOURCES FOR GENETICISTS
- HUGEN 2011 - SCIENTIFIC WRITING IN HUMAN GENETICS
- HUGEN 2022 - HUMAN POPULATION GENETICS
- HUGEN 2025 - HUMAN GENETICS SEMINAR (must be taken two times)
- HUGEN 2034 - BIOCHEMICAL AND MOLECULAR GENETICS OF COMPLEX DISEASES
- HUGEN 2040 - MOLECULAR BASIS OF HUMAN INHERITED DISEASE
- HUGEN 2049 - INTRODUCTION PUBLIC HEALTH GENETICS
- HUGEN 2050 - PUBLIC HEALTH GENETICS PRACTICUM
- HUGEN 2052 - ETHICAL ISSUES IN CLINICAL AND PUBLIC HEALTH GENETICS
- HUGEN 2053 - APPLICATIONS IN PUBLIC HEALTH GENETICS AND GENOMICS

School Core Course Requirements

- BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1
- BCHS 2509 - SOCIAL AND BEHAVIORAL SCIENCES AND PUBLIC HEALTH
- EPIDEM 2110 - PRINCIPLES OF EPIDEMIOLOGY
- EOH 2013 - ENVIRONMENTAL HEALTH AND DISEASE
- HPM 2001 - HEALTH POLICY AND MANAGEMENT IN PUBLIC HEALTH
- PUBHLT 2015 - PUBLIC HEALTH BIOLOGY
*Students in the Public Health Genetics program with adequate prior background may apply to be exempted from the requirements to take PUBHLT 2015. Most students do this.

- PUBHLT 2022 - THE DEAN'S PUBLIC HEALTH GRAND ROUNDS (must be taken for the first two semesters)
- PUBHLT 2033 - FOUNDATIONS IN PUBLIC HEALTH
- PUBHLT 2034 - PUBLIC HEALTH COMMUNICATIONS
- PUBHLT 2035 - APPLICATIONS IN PUBLIC HEALTH

Public Health Essay and Practicum

Students must write a master's essay, which may be based on the practicum experience or on another topic related to public health genetics. All essays must include analysis of data. The essay topic must be approved by the Director of the M.P.H. in Public Health Genetics program. The essay is read and approved by an M.P.H. Essay Committee that must consist of at least one of the Public Health Genetics faculty members in Human
Genetics and one from outside the department. The M.P.H. Essay Committee must be approved by the Office of Student Affairs. The essay must be approved by unanimous vote of the committee.

All students in the MPH in Public Health Genetics program are required to complete a Practicum. The Practicum is a supervised practice experience of at least 200 hours, providing students an opportunity to learn how genetics is applied in a public health setting and in the formulation and application of public health policy. MPH students are encouraged to seek out opportunities that fit their interests and goals with guidance provided by program leadership. Students may choose to complete their practicum in the city of Pittsburgh or in a location outside of the city. Many students will complete the practicum during their summer semester, but scheduling is flexible based on student needs.

Public Health Genetics Certificate

Advances in genetics are occurring at a pace that challenges our collective ability to respond to the many social, legal, ethical, and public health policy implications generated by this revolution of knowledge. Consequently, there is a compelling need to prepare future public health professionals in the biology, technology, applications, responsibilities, and issues of genetics information, which will play an increasing role in our understanding of health and disease. All areas of public health can be improved and expanded by examining the role of genetics in public health issues.

The purpose of the Certificate in Public Health Genetics is to provide graduates with a basic grounding in public health genetics that will enable them to function as public health professionals at the cutting edge of this important new area. Students enrolled in this certificate program are trained to incorporate knowledge of how genes, together with the environment and behavior, influence health and apply this insight into their area of practice or research. Students will be able to:

- Demonstrate basic knowledge of the role that genetics plays in the development of disease
- Identify the limits of his/her genetics expertise
- Identify ethical and medical, and/or societal limitations to genetic testing, including uses that don't benefit the individual
- Identify the role of cultural, social, behavioral, environmental, and genetic factors in development and prevention of genetic-related diseases

Certificate Requirements

The curriculum consists of 15 credits, of which at least 12 must be traditional classroom courses. The remaining three credits can be seminar, project, or practicum work.

All students receiving the certificate must give one presentation in a public health genetics course on a topic decided by the course instructor.

1) All students must take:
- HUGEN 2049 - INTRODUCTION TO PUBLIC HEALTH GENETICS

2) Students must take at least 6 credits from the following five courses to achieve competency in the basic science of genetics:
- HUGEN 2022 - HUMAN POPULATION GENETICS
- HUGEN 2010 - BIOINFORMATIC RESOURCES FOR GENETICISTS
- HUGEN 2031 - CHROMOSOMES AND HUMAN DISEASE
- HUGEN 2034 - BIOCHEMICAL AND MOLECULAR GENETICS OF COMPLEX DISEASES
- HUGEN 2040 - MOLECULAR BASIS OF HUMAN INHERITED DISEASE

3) A maximum of 3 credits may come from the following courses:
- HUGEN 2028 - HUMAN GENETICS JOURNAL CLUB AND PEER REVIEW
- HUGEN 2047 - CLINICAL GENETICS CASE CONFERENCE
- HUGEN 2050 - PUBLIC HEALTH GENETICS PRACTICUM
- HUGEN 2052 - ETHICAL ISSUES IN CLINICAL AND PUBLIC HEALTH GENETICS

4) Additional courses permitted for the certificate include the following:
- ALL OTHER HUMAN GENETICS COURSES
- EPIDEM 2601 - MOLECULAR EPIDEMIOLOGY TOOLS & TECHNIQUES
- BCHS 2572 - RISK COMMUNICATION

*Other courses must be approved by the Director of Graduate Studies for the Department of Human Genetics. Please note that HUGEN 2028 can be taken more than once.

Other courses may be permitted, but must be pre-approved by the Director of the MPH in Public Health Genetics Program in the Department of Human Genetics.
Students enrolled in Human Genetics degree programs other than the MPH in Public Health Genetics may receive the certificate, with the stipulation that the certificate curriculum must include at least six credits of coursework that is not part of the coursework for their degree and three credits of project or practicum work. The requirements for current Human Genetics students include:

**Six additional credits of coursework not already required by the student's degree program**
- Three of these credits must be HUGEN 2049: Introduction to Public Health Genetics
- The additional three credits of coursework can come from the approved list of additional courses above or must be approved by the Director of Graduate Studies for the Department of Human Genetics

**Three credits of a project or practicum work**
- A paper (10 double-spaced page minimum, plus references) describing the project or practicum is required to receive a grade for these credit hours. Writing guidelines will be provided to students.

**Students must give a presentation in HUGEN 2049 on a topic decided by the course instructor**

### Department of Infectious Diseases and Microbiology

The mission of the Department of Infectious Diseases and Microbiology is to conduct research, teaching, and service that will enhance the control of infectious diseases in the human population. Our goals to accomplish this mission include:

- Research programs that focus on understanding the mechanisms of pathogenesis of microbial infections at the cellular and molecular level as they relate directly to developing methods for disease prevention and treatment.
- Integrated teaching programs that are devoted to the education and training of graduate students in various molecular, immunologic and biologic aspects of microbial pathogenesis, as well as disease control and prevention.
- Programs that focus on population-based education and prevention for control of infectious diseases.

We have a commitment to high quality graduate education that is consistent with our leading cutting-edge research and behavioral health and community education programs. The degree programs draw upon the disciplines of molecular biology, immunology, epidemiology, medicine, health education, and community intervention to provide our students with opportunities to participate in cross-disciplinary research into multiple aspects of infectious diseases. As a graduate of our program you will be prepared for careers in academia, industry, government, and community service sectors. Our graduates have obtained professional positions with prestigious employers in the USA and worldwide. Examples include the National Institutes of Health, the Centers for Disease Control and Prevention, state and local health departments, pharmaceutical companies, hospitals, and major universities and other academic institutions.

The Department offers Master of Public Health (MPH), Doctor of Philosophy (PhD), and Master of Science (MS) degree programs. Students in the MPH program can pursue one of two concentrations: Infectious Disease Pathogenesis, Eradication, and Laboratory Practice (PEL) or Infectious Disease Management, Intervention, and Community Practice (MIC).

### Contact Information

Dr. Jeremy Martinson  
2134 Parran Hall  
412-624-5646  
jmartins@pitt.edu

Abby Michael  
2122 Parran Hall  
412-624-3331  
abm82@pitt.edu

For more information on admissions and registration contact the department at 412-624-3331 or idm@pitt.edu.
Admission

Admission to all of our graduate programs is for the fall semester only. Your application will be evaluated based on your undergraduate academic performance, Graduate Record Exam (GRE) test scores, letters of recommendation, relevant research or professional experience and personal statement.

The application deadline for admissions for the fall of 2018 is January 15, 2018. The IDM Graduate Admissions Committee strongly recommends that you submit all materials by this deadline to ensure prompt review.

Application materials, as well as tips for submitting materials on time, are available on the IDM web site www.idm.pitt.edu.

Early admission into the MS or MPH program

Outstanding applicants who are enrolled in an undergraduate program at the University of Pittsburgh may apply for early admission, also known as 3+2 Accelerated Master's Program. Additional admission requirements must be met for this program.

Financial Assistance

Financial support (through stipends and tuition waivers) is available for full-time doctoral students. A limited number of partial scholarships are available to outstanding new MS and MPH students.

Infectious Diseases and Microbiology, PhD

PhD Program Requirements:

Students complete the PhD program with 72 credits of coursework, a preliminary exam, comprehensive exam, dissertation overview, a first author publication, and a dissertation defense. Most students complete the PhD program within five-six years. For an up-to-date list of required courses and rules for other requirements, please see the IDM Handbook on the PhD webpage.

Qualifying (Preliminary) Examination: At the end of the first year.

Comprehensive Examination: At the end of the second year.

Dissertation Overview: A dissertation committee is formed usually within nine months after completion of the comprehensive examination to approve the proposed topic for the student's research.


Infectious Diseases and Microbiology, MPH

MPH Program Requirements:

Students complete the MPH program with 42 credits of coursework, a practicum, and a written thesis/essay. Most students complete the MPH program within one and half to two years. For an up-to-date list of required courses and rules for other requirements, please see the IDM Handbook . Coursework and other requirements for both Infectious Disease Pathogenesis, Eradication, and Laboratory Practice (PEL) and Infectious Disease Management, Intervention, and Community Practice (MIC) concentrations are available in this handbook.

Infectious Diseases and Microbiology, MS
MS Program Requirement:

Students complete the MS program with 36 credits of coursework, a comprehensive exam, and a thesis defense. Most students complete the MS program within two years. For an up-to-date list of required courses and rules for other requirements, please see the IDM Handbook on the MS webpage.

Examination: Comprehensive Examination at the end of the first two terms

Thesis Overview: Usually within five to six months after completion of the comprehensive examination

Thesis Defense: Final oral examination in defense of the thesis by the thesis committee

MS Program Requirements: The required courses for the MS degree are available on the IDM Degrees Web page at: www.idm.pitt.edu/.

Graduate Student Researcher Position

Graduate student researcher (GSR) positions are awarded by members of the epidemiology faculty to selected doctoral program applicants who have been accepted by Pitt Public Health or current doctoral students desiring funding support. Applications for these positions may be submitted online and are available to all faculty for review. Responsibilities may encompass work related to students' individual dissertation preparation or may be based upon other projects. All positions provide students with invaluable opportunities to collaborate with faculty and colleagues, and acquire transferrable skills.

Candidates are identified by faculty based upon individual academic background and experience sought, and in some cases, comparable research interests. Those selected for interviews are contacted directly by faculty via phone or email. Most positions are awarded by the end of April prior to the beginning of fall term, although intermittent offers are extended during the summer months. Accepted doctoral program applicants who plan to matriculate in spring term may also apply for these positions.

The GSR program is competitive because of the great demand for positions. With this in mind, it is not possible for the Department of Epidemiology to offer positions to all who apply, and those not receiving this support should be prepared to provide their own sources of funding.

Program Description

Graduate student researchers in the Department of Epidemiology are doctoral degree candidates who are receiving financial support from research funds secured by faculty in return for duties performed to meet the goals for which the funds were awarded. Candidates interested in obtaining funding must apply for these positions.

Eligibility

Only accepted doctoral program (PhD or DrPH) applicants or continuing doctoral students may be considered for GSR positions in the Department of Epidemiology. Master's program (MPH or MS) applicants and continuing master's degree students are not considered for these appointments. The department will review accepted doctoral program applicants for funding eligibility. However, due to the strong interest in funding and our available financial resources, not all applicants are offered funded positions.

Application submission

Continuing Pitt Public Health students accepted to an epidemiology PhD or DrPH program who wish to be considered for funding should contact the Student Services Manager and Program Administrator Lori Smith about how to proceed.

Effort and course registration requirements

GSRs are expected to devote twenty (20) hours per week to the research project from which they receive remuneration. GSRs must maintain a full-time credit load during fall and spring terms (9-15 credits) and must register for at least 3 credits in summer term.

Appointments

GSR appointments range from one to two terms at a time (fall, spring). Summer term appointments are awarded individually. Appointment renewals are subject to satisfactory job performance and availability of funding support.

Stipend

The monthly stipend payment for a GSR is currently $1,827.50.
Tuition Scholarships
GSRs will receive full tuition scholarships to cover up to 15 credits. Tuition scholarships will be renewed each period subject to satisfactory academic performance and continuing funding availability.

Health Insurance
GSRs will be provided individual coverage under the UPMC Health Plan for graduate students. Family coverage is available at an additional cost to the student.

School-level Admission Requirements

Degree and Certificate Requirements

All degree and certificate applicants must have completed Pitt Public Health's prerequisite courses.

Master of Public Health (MPH)
Applicants must possess:

- U.S. bachelor's degree from an accredited institution or the equivalent degree from a foreign school and substantial knowledge in a discipline relevant to public health, either through study, experience, or both.
- Applicants who do not already have a graduate degree are required to submit scores on the verbal, quantitative, and analytical portions (general test) of the Graduate Record Examination (GRE). Departments may require GRE scores from any applicant. In some cases, results of the LSAT, MCAT, or DAT may be substituted.

Master of Health Administration (MHA)
Applicants must possess:

- U.S. bachelor's degree from an accredited institution or the equivalent degree from a foreign school and substantial knowledge in a discipline relevant to public health, either through study, experience, or a combination.
- All applicants must submit scores on the verbal, quantitative, and analytical portions (general test) of the Graduate Record Examination (GRE).

Multidisciplinary Master of Public Health (MMPH)

- Applicants must hold a doctoral degree in the health sciences, be an advanced medical, dental, or veterinary student, or hold a relevant doctoral degree in a related field (considered on an individual basis).
- In most cases, official scores from the verbal, quantitative, and analytical portions (general test) of the Graduate Record Examination (GRE) must be submitted. GRE waivers will be granted on a case by case basis provided MCAT, PCAT, DAT or USMLE/ECFMG scores are submitted in place of the GRE.

Note: If you're a graduate of a foreign medical or dental school, you must hold a valid medical or dental license in the United States, be eligible for licensure, be in a residency or fellowship program, or be a visiting clinician planning to return to your native country.

Master of Science (MS)
Applicants must possess:

- A Bachelor's degree in arts, science, engineering, or nursing, or an MD, DDS, or DVM from an approved U.S. school or equivalent foreign degree
- Evidence of adequate training in the sciences basic to public health (some applicants may be admitted at the discretion of the faculty, making up deficiencies as prescribed)

Applicants may be required to take any examinations deemed necessary to satisfy the faculty as to the applicants' qualifications. In most cases, official scores from the verbal, quantitative, and analytical portions (general test) of the Graduate Record Examination (GRE) must be submitted.

Doctor of Public Health (DrPH)
Applicants must:

- Have an MPH or other graduate degree in a relevant field, or
- Fulfill admission requirements for the MPH
- Demonstrate (or have demonstrated previously) ability for leadership in their field, as well as for advancement of scientific knowledge

Most DrPH applicants are required to submit scores on the verbal, quantitative, and analytical portions (general test) of the Graduate Record Examination (GRE).
Check the department to which you're applying for more specific requirements.

**Doctor of Philosophy (PhD)**
Applicants must:

☐ Possess an U.S. graduate or bachelor's degree, or the equivalent degree from a foreign school, in a field relevant to the PhD program to which they are applying
☐ Have had sufficient courses in mathematics and the biological and social sciences
☐ Have had sufficient prerequisite courses in the field to which they are applying

Applicants who don't already have a graduate degree are required to submit scores on the verbal, quantitative, and analytical portions (general test) of the Graduate Record Examination (GRE). Departments may require GRE scores from any applicant. In some cases, LSAT, MCAT, or DAT scores may be submitted.

**Certificate Programs**
Applicants must possess:

☐ U.S. bachelor's degree from an accredited institution or the equivalent degree from a foreign school and substantial knowledge in a discipline relevant to public health, either through study, experience, or a combination
☐ Applicants who don't already have a graduate degree must submit scores on the verbal, quantitative, and analytical portions (general test) of the Graduate Record Examination (GRE). Departments may require GRE scores from any applicant. In some cases, results of the LSAT, MCAT, or DAT may be substituted.

**GRE Requirements for Degree Programs**

Each department reserves the right to require that any applicant submit an official GRE score report, even if the chart indicates that under the specified circumstances the GRE is generally waived. No photocopies of GRE score reports will be accepted. Use Pitt Public Health code 4234 to send your official GRE scores; department codes are NOT used.

**GRE Scores**

<table>
<thead>
<tr>
<th></th>
<th>Master of Science</th>
<th>Master of Public Health</th>
<th>Master of Health Administration</th>
<th>Doctor of Philosophy</th>
<th>Doctor of Public Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral and Community Health Sciences</td>
<td>N/A</td>
<td>Required*</td>
<td>N/A</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Biostatistics</td>
<td>Required</td>
<td>N/A</td>
<td>N/A</td>
<td>Required</td>
<td>N/A</td>
</tr>
<tr>
<td>Environmental and Occupational Health</td>
<td>Required*</td>
<td>Required*,**</td>
<td>N/A</td>
<td>Required*</td>
<td>N/A</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>Required**</td>
<td>Required**</td>
<td>N/A</td>
<td>Required**</td>
<td>Required**</td>
</tr>
<tr>
<td>Health Policy &amp; Management</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*All international applicants MUST submit GRE scores.*

**MPH/JD:** Must submit LSAT

**MHA/MBA:** May submit GRE scores.
<table>
<thead>
<tr>
<th>Program</th>
<th>Required*</th>
<th>Required*</th>
<th>Required*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Genetics</td>
<td>All international applicants MUST submit GRE scores.</td>
<td>All international applicants MUST submit GRE scores.</td>
<td>All international applicants MUST submit GRE scores.</td>
</tr>
<tr>
<td>Genetic Counseling</td>
<td>Required*</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Genetic Counseling:</td>
<td>Required*</td>
<td>All international applicants MUST submit GRE scores.</td>
<td>N/A</td>
</tr>
<tr>
<td>Infectious Diseases and Microbiology</td>
<td>Required*.**</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Infectious Diseases and Microbiology</td>
<td>All international applicants MUST submit GRE scores.</td>
<td>All international applicants MUST submit GRE scores.</td>
<td>All international applicants MUST submit GRE scores.</td>
</tr>
<tr>
<td>Multidisciplinary MPH</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Multidisciplinary MPH</td>
<td>MCAT or DAT official score report required for all US applicants. All international applicants must submit the GRE scores.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*If you already have a U.S. graduate degree (or the equivalent), contact the department and request a GRE waiver. There is no guarantee that a waiver will be granted. If the GRE requirement is waived, you must request that the department send a written memo to the admissions manager. Email this request to the department student services staff: BCHS: Paul Markgraf; EOH: Penny Weiss; HUGEN: Noel Harrie; IDM: Abby Kincaid.

**MCAT or DAT may usually be substituted for GRE.

### School-wide Prerequisite Courses

#### Social Science Requirement

MPH candidates must have six college credits in behavioral and social sciences (with a C or better).

#### Mathematics Requirement

All applicants must have mathematical preparation appropriate for entrance into Principles of Statistical Reasoning, usually consisting of college-level statistics, algebra, or calculus (with a C or better). Advanced placement courses reflected on college transcripts may fulfill this requirement. An ETS administered advanced placement test score of three or higher in calculus or a GRE quantitative score at or above the 70th percentile is also evidence of acceptable preparation.

#### Department Requirements

In addition to school and degree-level requirements, each department has specific requirements. Once you know which program(s) you're applying to, be sure to review departmental requirements.

#### Certificate Programs

Applicants must meet requirements for admission to MPH.

### Department-specific Admission Requirements
Each program at Pitt Public Health has specific requirements. Once you know which program(s) you're applying to, be sure to review the departmental requirements listed below.

**Behavioral and Community Health Sciences**

PhD applicants must hold a post-baccalaureate degree, e.g., a master of science degree, in a discipline relevant to public health, such as social work or anthropology, or an MD or JD. DrPH applicants must either hold an MPH degree or a post-baccalaureate degree in a discipline relevant to public health. DrPH applicants who do not hold an MPH degree must complete the Pitt Public Health school core courses in addition to the requirements for the DrPH degree if accepted. A degree from a school accredited by the Council on Education for Public Health (CEPH) is highly desirable.

### Biostatistics

<table>
<thead>
<tr>
<th></th>
<th>MS</th>
<th>MPH</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior Degree Required</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Complete and Submit Application</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Three Letters of Recommendation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Biology (3 credits)</td>
<td>Yes**</td>
<td>Yes**</td>
<td></td>
</tr>
<tr>
<td>Biology (6 credits)</td>
<td>Yes**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Science</td>
<td>Yes**</td>
<td>Yes**</td>
<td>Yes**</td>
</tr>
<tr>
<td>Calculus (1 year)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GRE within three years of application</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Social Science (6 credits)</td>
<td>Yes**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Degree should be a professional health degree, such as nursing, MD, DDS, or DVM

** Deficiency can be made up during the first year

### Environmental and Occupational Health

**Acceptable undergraduate training includes:**

- a bachelor's degree in the physical, chemical, or biological sciences with at least a 3.0 grade-point average overall and in the basic sciences;
- a minimum of two courses each in organic chemistry, biology, physics, and calculus; and
- the Graduate Record Examination (GRE), unless you already have a graduate or professional degree and a waiver is approved.

### Epidemiology

All epidemiology degree programs require 3 college-level credits of human biology course work. Advanced Placement biology course work does not fulfill this requirement.
Health Policy and Management

Acceptable undergraduate training includes:

MHA applicants

- minimum of three credits in human biology
- minimum of three credits in college-level mathematics (algebra or higher) or statistics
- minimum of six credits in the social and behavioral sciences, preferably with at least one course in economics
- GRE required but current scores from the following exams will be considered on a case by case basis: GMAT, LSAT, MCAT or PCAT

MPH and JD/MPH applicants

- minimum of three credits in college level mathematics (algebra or higher) or statistics
- minimum of six credits in the social and behavioral sciences, preferably with at least one course in economics
- GRE required but current scores from the following exams will be considered on a case by case basis: GMAT, LSAT, MCAT or PCAT

MS applicants

- QPA of 3.0 or higher (undergraduate degree)
- undergraduate or graduate calculus with a 3.0 or higher
- GRE scores in at least the 50th percentile or higher in all categories
It is recommended that applicants have completed coursework in statistics, economics and another social science

PhD applicants

- QPA of 3.3 of higher (master's degree not required)
- undergraduate or graduate calculus with a 3.0 or higher
- GRE scores in at least the 60th percentile or higher in all categories

Human Genetics

Acceptable undergraduate training includes the following:

MS in human genetics and PhD applicants

- Bachelor's degree in a discipline related to the biological or behavioral sciences from an accredited college or university, with a minimum GPA of 3.0
- Graduate Record Examination (GRE) scores above the 70th percentile for the verbal and quantitative tests
- Introductory courses in genetics and calculus are required; additional coursework in biochemistry and behavioral or social sciences are recommended but not required.

MS in Genetic Counseling

- Please see the Genetic Counseling Program's Admissions page for information on admissions requirements

MPH in Public Health Genetics

- Candidates must have a degree in a discipline relevant to public health or must have substantial knowledge of a discipline relevant to public health either gained either through study or experience
- Graduate Record Examination (GRE) scores above the 70th percentile for the verbal and quantitative tests
- Coursework in genetics, biochemistry, and calculus is helpful but not required.

Infectious Diseases and Microbiology

MS and PhD programs

- minimum 3.0 combined grade-point average in biology, chemistry, math, and biochemistry and/or molecular biology and/or immunology
- relevant research experience in biochemistry, immunology, and molecular biology
- college biology with or without microbiology
chemistry, including organic chemistry with laboratory and biochemistry

college-level algebra

MPH programs

minimum six credits of college-level behavioral science, to include at least one course in sociology or social psychology and an additional course in anthropology, economics, political science, psychology, or sociology with a grade of C or better

**Multidisciplinary Master of Public Health** (for clinically trained health professionals)

*The program is open to...*

- Physicians, dentists, and veterinarians
- Holders of doctoral degrees in the health sciences
- Advanced medical and dental students (considered on an individual basis)
- Holders of other relevant doctoral-level degrees (considered on an individual basis)

If you're a graduate of a foreign medical and dental school, you must hold a valid medical or dental license in the United States, be eligible for licensure, be in a residency or fellowship program, or be a visiting clinician planning to return to your native country.

**Certificate Programs**

*Applicants must possess:*

- U.S. bachelor's degree from an accredited institution or the equivalent degree from a foreign school and substantial knowledge in a discipline relevant to public health, either through study, experience, or a combination
- Applicants who don't already have a graduate degree must submit scores on the verbal, quantitative, and analytical portions (general test) of the Graduate Record Examination (GRE). Departments may require GRE scores from any applicant. In some cases, results of the LSAT, MCAT, or DAT may be substituted.

**Non-Degree Status**

You can take up to 12 credits (cumulative maximum) as a non-degree student. If you are later accepted into a degree program, that program will decide which of those credits may be applied to your requirements.

**Applying for Admission to Pitt Public Health**

**If You Are Applying for a Degree Program**

All new degree-seeking applicants, except those applying for non-degree study, only a certificate program, Genetic Counseling MS, and/or dual-degree Genetic Counseling MS/MPH, must apply through SOPHAS, the online, centralized application service for CEPH-accredited schools of public health. SOPHAS submits applications to the Pitt Public Health only after all required materials are received.

- Apply online through SOPHAS.
- Pay application fee directly to SOPHAS.
- Submit personal statement through SOPHAS.
- Submit three recommendations directly to SOPHAS.
- Submit official transcripts for ALL education in the United States directly to SOPHAS.
- Submit a course-by-course WES evaluation for ALL education outside of the United States (not including study abroad) directly to SOPHAS.
- Submit official GRE scores to the Graduate School of Public Health code 4234, with no department code.
- Submit official TOEFL scores (if applicable) to SOPHAS code 5688.
Track the status of your completed application online.

Note: Pitt Public Health holds its applicants and students to the high ethical standards expected of public health professionals. Any form of misrepresentation or plagiarism discovered in an application will result in immediate rejection of the applicant. The incident also will be reported to SOPHAS, the public health shared application service, which will notify other participating schools.

If You Are Applying for Genetic Counseling MS or dual-degree Genetic Counseling MS/MPH Programs

All new Genetic Counseling MS and/or dual-degree Genetic Counseling MS/MPH applicants must apply through SOPHAS Express.

- Apply online through SOPHAS Express
- Pay application fee directly to SOPHAS Express
- Submit personal statement through SOPHAS Express
- Submit three recommendations through SOPHAS Express
- Submit official transcripts for ALL education in the United States and/or in Canada directly to the Pitt Public Health Student Affairs Office. Official e-transcripts can also be emailed to satemp5@pitt.edu
- Submit a course-by-course WES evaluation for ALL education outside of the United States (excluding study abroad but including non-English speaking Canadian institutions) directly to the Pitt Public Health Student Affairs Office.
- Submit official GRE scores to the University of Pittsburgh code 2927, with no department code
- Submit official TOEFL scores (if applicable) to University of Pittsburgh code 2927

Note: Pitt Public Health holds its applicants and students to the high ethical standards expected of public health professionals. Any form of misrepresentation or plagiarism discovered in an application will result in immediate rejection of the applicant. The incident also will be reported to SOPHAS Express, the public health shared application service, and the Genetic Counseling program.

If You Are Applying for Non-Degree Study

Interested applicants may enroll in 12 credits of non-degree study before applying to a degree-seeking program.

- Apply online through SOPHAS Express and complete required sections only
- Pay application fee online directly to SOPHAS Express
- Submit official transcripts for all education in the United States to Pitt Public Health Office of Student Affairs
- Submit a course-by-course WES evaluation for all education outside of the United States (not including study abroad) to Pitt Public Health Office of Student Affairs
- Submit official TOEFL scores (if applicable) to the University of Pittsburgh institution code 2927, with no department code.

Note: Non-degree applicants are not required to submit recommendations, upload transcripts through SOPHAS Express, submit test scores, or submit any non-required sections of the SOPHAS Express application.

More information about the non-degree option

If You Are Applying for a Certificate Only

If you are only applying to a Pitt Public Health certificate, you may apply through the abbreviated application below. If you also plan to apply for a degree program, do not apply through SOPHAS Express for the certificate. You will only be required to apply through SOPHAS following the instructions above.

- Apply online through SOPHAS Express
- Pay application fee online directly to SOPHAS Express
- Submit a personal statement through SOPHAS Express
- Submit three recommendations through SOPHAS Express
Submit official transcripts for all education in the United States to Pitt Public Health Office of Student Affairs
Submit a course-by-course WES evaluation for all education outside of the United States (not including study abroad) to Pitt Public Health Office of Student Affairs
Submit official GRE scores to the University of Pittsburgh code 2927, with no department code
Submit official TOEFL scores (if applicable) to the University of Pittsburgh institution code 2927, with no department code.

Note: Applicants who are interested in only pursuing a certificate should contact the program before applying to confirm the availability of courses. International applicants are not eligible to apply for only a certificate program due to the full-time registration requirements of the student visa.

Current Pitt Public Health Students Applying to a New Degree or Certificate Program

Current degree-seeking students interested in transferring to another program or adding another academic program/certificate must:

- E-mail a brief statement including name, current program, details on the plans to transfer or add a program, and the term in which you would like to begin the program to the admissions manager, Karrie Lukin.
- Submit official GRE scores (if applicable) to the University of Pittsburgh code 2927, with no department code.

Further instruction will be forwarded to you once the admissions manager receives your email of intent, depending on the department's requirements.

Note: Pitt Public Health non-degree students are required to apply through SOPHAS if they are interested in being considered for a degree program. See above for the application instructions.

Admissions Review Process

Pitt Public Health processes new applications on Tuesdays and Thursdays. Once the school has received your verified application from SOPHAS or SOPHAS Express and has processed internally, you will be notified by email. If your application is complete by our school-specific requirements, it will be sent to the department for their review. If your application is incomplete, you will receive an initial email about the missing items and then you will be sent periodic e-mail reminders about the incomplete status. Applicants are not considered for admission until all required application materials have been received. Please be sure to add donotreply@webadmit.org and @sendgrid.me to your safe-senders list in your e-mail account.

Your application will be reviewed by the departmental committees. Departmental review generally takes four to six weeks, but the timing may vary by department or by season. As soon as the department has submitted a decision on your application to the Office of Student Affairs, you will be notified of the admissions committee's decision by e-mail. If your application is accepted, an official offer of admission will be mailed to you.

Note: A departmental committee evaluates applications and makes a recommendation to the assistant dean for Student Affairs. Admission is not final until the assistant dean for Student Affairs issues a letter of acceptance.

In the following circumstances, application materials will be kept for one year from the date the application was received and then be destroyed:

- Application remains incomplete.
- Application is not accepted.
- Application is accepted, but applicant does not respond.
- Application is accepted, but the applicant declines admission.

Mailing Address
3+2 Accelerated Master's Program Admission Requirements

In addition to the general requirements, each department has its own admissions requirements.

<table>
<thead>
<tr>
<th>Department (Program)</th>
<th>Admission Requirements for 3+2 Accelerated Program</th>
</tr>
</thead>
</table>
| Behavioral and Community Health Sciences (MPH) | - Undergraduate GPA: 3.5  
- GRE scores: 60th (V), 31st (Q) percentiles; 4.5 (A)  
- Health-related experience (work or volunteer)  
- All majors acceptable if above criteria are met |
| Biostatistics (MS) | - Undergraduate GPA: 3.0  
- GRE scores: 72nd (V), 67th (Q) percentiles  
- Prior coursework: calculus (2 semesters)  
- Suggested major: mathematics (other majors acceptable if above criteria met) |
| Environmental and Occupational Health (MPH) | - Undergraduate GPA: 3.0  
- GRE scores: 60th (V), 50th (Q) percentiles  
- Prior coursework (grade of B or better): biology (2 required), organic chemistry, general chemistry, physics, and calculus  
- Major: biology, chemistry, or mathematics |
| Epidemiology (MPH) | - Undergraduate GPA: 3.2  
- GRE scores must be submitted  
- Three (3) letters of recommendation  
- Prior coursework: social sciences (6 cr.), mathematics (3 cr.), human biology (3 cr.)  
- All majors acceptable if above criteria are met |
| Health Policy and Management (MHA) | - Undergraduate GPA: 3.5  
- GRE scores: 85th (V), 50th (Q) percentiles; 5.0 (A)  
- All majors acceptable, if above criteria are met |
| Human Genetics | - Undergraduate GPA: 3.5 |
(MPH or MS)
- GRE scores: 70th (V, Q, A) percentiles
- Prior coursework in chemistry, biochemistry, and molecular biology
- All majors acceptable if above criteria are met
- Undergraduate GPA: 3.3

Infectious Diseases and Microbiology (MPH or MS)
- GRE scores: 75th percentile (combined)
- Strong letters of recommendation from persons directly familiar with academic performance
- Appropriate undergraduate major

3+2 Accelerated Master's Program

Qualified Pitt undergraduates apply in their third year and enroll in graduate classes in their fourth year. As they begin master's degree studies, students simultaneously satisfy remaining undergraduate requirements to graduate on time with their bachelor's degree at the end of their fourth year.

Students in the accelerated bachelor's/master's program fully participate in the graduate school experience and prepare themselves for their future career:

- Develop new skills with advanced coursework
- Gain real-world experience through a required practicum or internship
- Work with experienced researchers on basic and applied research problems

Though graduate school is challenging, this accelerated program allows motivated students to obtain a graduate degree and career path-all while saving up to one year's worth of tuition!

Try out Public Health

Not sure what public health is all about? Explore public health or learn more about the school and the professional field by...

- taking a course-for credit-to satisfy a general education elective,
- attending an event whether it's a talk, presentation, workshop, or social event open to the University,
- participating in a recruitment event like our fall open house for prospective students,
- contacting a faculty member whose work interests you,
- chatting with a student services coordinator to learn more about our different departments and programs,
- talking to your advisor,
- Or, contacting our Office of Student Affairs for help or to set up a meeting.

How to apply

Students interested in the accelerated bachelor's/master's program apply online to the specific department and program, normally in the middle of their junior year. Plan on

- taking the GRE (submit scores to code 4234)
- completing some background courses in the behavioral and social sciences (with a C or better)
- having mathematical preparation needed to take Principles of Statistical Reasoning (usually college-level statistics, algebra, or calculus with a C or better)
- being on-track to complete at least 96 credits by time you start as a graduate student
Tuition and Billing

The tuition and fees listed below reflect current information at the time of posting and are likely to increase in the next academic year. Rates are set by the University and the official postings should be consulted for current information.

Tuition Rates for 2016-2017

<table>
<thead>
<tr>
<th>Status</th>
<th>Pennsylvania Resident</th>
<th>Out of State Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>$12,750 per term</td>
<td>$21,065 per term</td>
</tr>
<tr>
<td>9-15 credits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>$1,039 per credit</td>
<td>$1,726 per credit</td>
</tr>
<tr>
<td>1-8 credits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTDR</td>
<td>$500</td>
<td>$500</td>
</tr>
</tbody>
</table>

During fall and spring terms, students registered full-time are billed a flat, full-time rate. Students enrolled part-time are billed on a per-credit basis. All students are billed on a per-credit basis during summer terms.

Doctoral students registered for full-time doctoral research (FTDR) pay a flat rate of $500 plus full-time fees.

Additional Fees for 2016-2017

<table>
<thead>
<tr>
<th>Activity</th>
<th>Computer</th>
<th>Wellness</th>
<th>Security and Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>$30/term</td>
<td>$175/term</td>
<td>$120/term</td>
</tr>
<tr>
<td>(includes FTDR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>$15/term</td>
<td>$100/term</td>
<td>$60/term</td>
</tr>
</tbody>
</table>

Billing Information

Contact the Student Payment Center, 412-624-7520, with billing questions.

Invoice Payment

Students and their Authorized Users will be notified twice before each due date if there is a balance due on the student account. Electronic invoices (eBills) are posted on the student's account after registration for classes, on or about the 20th of every month, and are due on the 17th of the next month. The University may also place a financial hold on overdue accounts.

Add/Drop

Students who drop courses by the term's deadline for add/drop may have their tuition for the term adjusted if they are part-time students, or if the drop changes their status from full-time to part-time.

Resignation Refunds Direct Deposit

Adjustments to tuition charges resulting from official resignation or Add/Drop are based on the effective date of resignation and in accordance with the federally mandated calculation. Contact the Student Payment Center (412-624-7520) for information on the amount of tuition adjustment.
Installment Payments

All students should enroll for direct deposit as refunds and financial aid are awarded through eRefunds.

They should also update their authorized users (parents, spouses, and others) so that they can have access to their student account.

Tuition & Financial Aid

Tuition and fees are set by the University and the official postings should be consulted for current information.

Learn more about Tuition and Billing

Financial Aid

Pitt Public Health cannot guarantee funding to every student, but last year the school provided more than $5 million in financial aid to graduate students. Almost all Pitt Public Health doctoral students and many master's students receive some type of financial aid, whether in the form of full or partial scholarships, fellowships, student assistantships, student employment, or student loans.

Students who receive aid generally receive it through their department, and the amount of aid available varies among the programs. Priority consideration is given to doctoral students. Departments may award graduate student research positions to international students. Important: At the time of admission, international applicants who have not been offered financial aid are required to submit an affidavit indicating that they have sufficient funds to cover their tuition and living expenses for the duration of the program. Visa documents are issued on the basis of these affidavits, and the expectation of self-support continues throughout the entire period of enrollment.

Important Information on Financial Aid for International Applicants

In general, international students are not eligible for student loans, federal traineeships, fellowships, or scholarships. International students may be eligible for selected scholarships or assistantships. (A significant number of our international doctoral students are supported by assistantships.)

Important: At the time of admission, international applicants who have not been offered financial aid are required to submit an affidavit, indicating that they have sufficient funds to cover their tuition and living expenses for the duration of the program. Visa documents are issued on the basis of these affidavits, and the expectation of self-support continues throughout the period of enrollment.

International students should always consult with the Office of International Services before applying for student employment.

Contacts for Financial Aid

Contact your GSPH Department Student Services Staff or academic advisor first with questions about student assistantships, scholarships, and hourly employment.

University of Pittsburgh Student Loans

Pitt Office of Admissions and Financial Aid
412-624-7488

Student Hourly Employment

Contact your GSPH Department Student Services Staff or your departmental academic advisor.

Contact the University's Office of Human Resources at 412-624-7000.

Scholarships, Assistantships, Fellowships

Contact your GSPH Department Student Services Staff or academic advisor.

Key Deadlines
Loan Applications

Student loan applications are processed for GSPH students by the University's Office of Admissions and Financial Aid (OAFA; 412-624-7488). See complete instructions for applying for a student loan on the University's Office of Admissions and Financial Aid page.

Student Loan Deadlines

While there is no strict deadline for application, the suggested filing dates are encouraged:

- June 1 (fall term)
- October 1 (spring term)
- February 1 (summer term)

Students are encouraged to submit loan application documents as soon as possible before the start of the term for which a loan is requested.

For information about student loans, view the University's Office of Admission and Financial Aid's PowerPoint presentation.

Types of Aid

Student Loans

Generally, applicants must be U.S. citizens or permanent residents. Contact Office of Admissions and Financial Aid for information on loan options, availability, and to apply.

Call 412-624-7488 to check the status of your loan application.

Free Application for Federal Student Aid (FAFSA)

The Free Application for Federal Student Aid (FAFSA) is required for all students who wish to be considered for loans or Pitt Public Health aid. The University of Pittsburgh federal school code is 008815.

Federal Regulations on Student Loans: Satisfactory Academic Progress (SAP)

Institutions participating in Title IV Federal Student Aid programs must monitor satisfactory academic progress of students receiving any federal loans or other aid (e.g. scholarships).

To demonstrate satisfactory progress, students must maintain a 3.0 GPA and complete at least 67% of the total credits attempted at any point doctoral students must complete the degree within the statute of limitation for the degree and must complete the degree with no more than 150% of the required credits. If progress is not met, students may be ineligible to receive loans or other aid. Students may appeal, in which case they will have one term to achieve the SAP standards. See Mary Derkach in the Office of Student Affairs, A519 Crabtree Hall, to submit an appeal of determination of no progress.

If you receive federal aid, you should read the entire SAP policy. In particular, FTDR registration is counted as 9 credits for the purposes of this law; retaking courses and receiving course grades of W, I, G, F, N (audit) and R all count towards the stated totals. Advanced standing credits also count toward the total number of credits taken. Also, carrying a large number of I, G, W, R, and F graded credits may potentially violate the 67% completion rule. Contact your instructor(s) about filing real grades on a term-by-term basis, where appropriate.

Emergency Loans

The University may provide loans of up to $200 for students in emergency financial need. Interested students should contact the Student Organization Resource Center (SORC) on the first floor of the William Pitt Union, 412-624-7116.

Short-term student loans of up to $500 may be available through the Pitt Public Health Office of Student Affairs for students with unexpected emergencies who have paid their tuition for the term. Students should contact Assistant Dean for Student Affairs Mary Derkach for more information.

Grants and Scholarships

Important Note on Loan Eligibility with Regard to Grants and Scholarships
The University recalculates a student's loan eligibility whenever additional financial aid appears in the student financial system. New aid may result in a reduction or total cancellation of loan eligibility, including an obligation to immediately repay all or part of a loan already disbursed. If you receive a scholarship, you may want to schedule a meeting with a loan counselor in the Office of Admissions and Financial Aid and ask for a recalculation of your loan eligibility.

University Aid

The University offers several scholarships throughout the year that are suitable for graduate students. These scholarships will be announced to departments and students will be invited to apply.

Pitt Alumni Association Graduate Scholarship
A one-time $5,000 scholarship awarded to graduate students who also completed their undergraduate degree at Pitt.

The George L. Carson Graduate Fellowship for Pitt Alumni
Awarded to a graduate student who was affiliated with a Pitt athletics program as an undergraduate. Applications will be available in February and are typically due May 1. Contact the Student Life and Compliance Office in the Athletics Department with questions.

Owens Fellowship
A needs-based, $6,000 per year fellowship that can be used for tuition, books, and living expenses. Copies of GRE scores or other standardized test scores may be required. Applications are available in February. Contact the University's Office of Admissions and Financial Aid in Alumni Hall, 412-624-7488 for applications and information.

Provost's Development Fund
A needs- and merit-based grant for doctoral students intended to provide financial support and professional development for women and disadvantaged students. Applicants must be U.S. citizens or permanent residents. Applicants must also be in the final year of their doctoral program, having completed all required coursework and working on their dissertation. Contact Linda Williams-Moore at lwmoores@pitt.edu for more information.

K. Leroy Irvis Fellowships
Graduate schools receive one award each year to provide first-year support of an outstanding, full-time doctoral student who supports the University's and school's diversity mission. The Irvis Fellowship provides a stipend, tuition remission, and health insurance for the first year; the academic department provides the same level of support for years two and three. Nominations are made by departments.

Pitt Public Health Aid

Pitt Public Health awards the following partial scholarships annually, generally at the start of the fall term. Students may contact their departments and request to be nominated.

Dean's Public Health Scholars Award
During the early spring term each department can nominate one outstanding incoming master's student for the Dean's Public Health Scholars Award, which provides a 50% tuition scholarship for up to two years of full-time graduate studies. Student must be registered full-time through the Graduate School of Public Health to receive the award.

In addition, two scholarship awards are reserved for direct application by newly accepted applicants for Fall 2017. Applicants who wish to be considered for one of these awards must send a request to Mary Derkach, Office of Student Affairs, at derkach@pitt.edu. Selected applicants must plan to enroll through Pitt Public Health as full-time master's students, and be U.S. citizens or permanent residents, with verbal GRE scores in the 70th percentile or better, and quantitative scores in the 60th percentile or better. In addition, requests must be accompanied by a statement describing the applicant's academic achievements to date as well as her/his ability to enhance or contribute to the diversity and inclusiveness of the Pitt Public Health student body. Second-year funding is available, contingent upon a GPA of 3.3 or higher in the first year.

Campaign for the Next 5,000 Alumni
Financial support based on need, merit, and diversity. Although preference may be given to master's students, doctoral students are also eligible.

Dean's Endowed Doctoral Scholarship
Support for doctoral students based on need, merit, and community service.
**Dr. Edgar and Lauraine Duncan Scholarship**
Financial support for disadvantaged students that can be used for student fees, stipend, books, or travel expenses.

**Bernard D. Goldstein Student Award in Environmental Health Disparities and in Public Health Practice**
For students or postdoctoral fellows studying either the environmental causes of health disparities or the practice of public health. This award is administered in alternate years by the Center for Health Equity (even-numbered years) and the Center for Public Health Practice (odd-numbered years). Apply by November 18, 2016.

**Departmental Awards**

**Behavioral and Community Health Sciences**

**Carol McAllister Award**
Based on need and merit, awards can be used for books, fees, stipends, or travel expenses.

**Karen S. Peterson Memorial Research Award for Women's Health**
Research or practice support for work in women's health.

**Joseph and Brigida Ricci Scholarship**
Needs-based support for an outstanding student.

**Myrna Silverman Scholarship**
Needs-based support for an outstanding doctoral student.

**Biostatistics**

**Biostatistics Endowed Scholarship Fund**
Tuition support.

**Department of Biostatistics Endowment Fund**
Resource support including travel and registration for academic and professional conferences.

**Epidemiology**

**Arlene W. Caggiula Student Award in Nutrition**
Tuition support for students studying nutritional epidemiology, a nutrition-related component of chronic disease, a nutrition-related component of aging, or the evaluation of the epidemiology of a nutrition-related disorder.

**Katherine Detre Scholarship**
Awarded to promising accepted doctoral applicants or continuing doctoral students who demonstrate high levels of scholarship and commitment to public health. Established to supplement graduate student support in the Epidemiology Data Center.

**Lewis H. Kuller Scholarship Award**
Resource support that can be used to cover tuition, book, fee, research, or travel expenses, or stipends.

**Evelyn H. Wei Memorial Fund**
Resource support for travel to attend approved scientific meetings, events, or conferences.

**Evelyn H. Wei Scholarship Award in Epidemiology**
Tuition assistance for master's or doctoral degree students based upon potential contribution to public health, with emphasis on scholarship, leadership, and service.

**Health Policy and Management**
The Dawn Gideon Scholarship for MHA Students
Provides scholarship assistance for students in the MHA program whose talents lean towards creative problem solving and an understanding of the value all individuals bring to the process.

Nathan Hershey Endowment in Health Administration
An annual award to a full time student enrolled in the MHA program. Secondary criteria shall include need.

HPM Friends and Alumni Scholarship Fund
This scholarship provides tuition support to students within the Department of Health Policy Management.

Hunter Group Health Policy and Management Student Scholarship Award
This endowed fund provides tuition assistance for students in the Department of Health Policy and Management.

The Thomas and Judy Priselac Endowed Fund for Healthcare Leadership
Provides support for MHA students participating in selected professional and leadership development activities nationally, including professional association conferences, academic team competitions, professional networking, and other health management career path opportunities.

Surma Scholarship for Long-term Healthcare Administration in Policy and Aging
This endowed fund provides support to Graduate School of Public Health students who are Pennsylvania residents and have demonstrated interest in long-term healthcare administration or policies.

Human Genetics

C. C. & Clara Li Endowed Scholarship
The award is offered to the top accepted applicants in each of our four offered programs, PhD, MS, MPH and MS-GC. It can be used towards tuition support or to defray the cost of books, lab related fees, conference travel, etc.

George Qi Wang Memorial Student Assistance Fund in Pharmacogenetics
Tuition support for students pursuing research studies in pharmacogenetics; open to students in any of the Schools of the Health Sciences or Arts and Sciences.

Infectious Diseases and Microbiology

Bob Yee Student Award
Tuition support.

Other Financial Support - Resources for Research and Professional Development

Russell Rule Rycheck Award for a Promising MPH Student
A $500 award for MPH students committed to the practice of public health. Funds can be used for books, coursework, travel, or professional development. Applications due to Mary Derkach, assistant dean for student affairs, A519 Crabtree Hall, by December 4 each year. If December 4 falls on a Saturday or a Sunday, applications are due the following Monday.

William T. Green Jr. Award in Public Health Studies
A $500 award to support research and special projects for currently enrolled Pitt Public Health students. Funds can be used for direct research costs, books, travel, or professional memberships. Applications due to Mary Derkach, assistant dean for student affairs, A519 Crabtree Hall, by December 4 each year. If December 4 falls on a Saturday or Sunday, applications are due the following Monday.

Other Financial Support - Travel Awards for Conferences and International Study

Pitt Public Health Support

Office of Student Affairs
The Office of Student Affairs provides departments with $500 each year to use for student travel grants. To apply for a travel grant, please see the student services staff member in your department. Awards are allocated on a first-come, first-served basis and travel must take place no later than mid-May. Receipts for reimbursement must be submitted to your department as soon as you return from your conference/meeting.

Awards can be applied only to future travel. Travel must take place during the student's enrollment in a degree program at Pitt Public Health. Students may request only one award per academic year. Awards will be processed as a travel expense reimbursement (TBE) by the student's department upon submission of receipts for travel. In no case can the amount of the award exceed expenses. Students applying for travel awards from more than one source should prepare one reimbursement form for all of the sources, since original receipts are required for all sources.

**Student Government Association**

Students can apply for a travel awards (up to $150) from the Student Government Association. Applications are available from the Office of Student Affairs.

**Global Health**

Donald S. Burke, dean of Pitt Public Health and associate vice chancellor for global health, sponsors a grant program for graduate students in the health sciences who want to conduct international research to address global health issues. Availability of grants can be found annually in the *Weekly Update*.

**University Support**

**Foreign Language Area Studies (FLAS)**

Funded by the U.S. Department of Education with the intent of promoting the study of a modern, European foreign language within a cultural, scientific, or historical framework. Fellowships are awarded annually for summer and academic year study. Submit an application to Pitt Public Health, and we will then select nominees and forward them to the University Center for International Studies.

**Graduate and Professional Student Government**

Grants support for travel to academic and professional conferences. Applicants are eligible for one grant per fiscal year (July 1- June 30), and funds are awarded on a first-come, first-served basis.

**Nationality Rooms Scholarships**

These scholarships reflect decades of work honoring education through cultural exchange. After the Nationality Rooms were built in Pitt's Cathedral of Learning, committees stayed together to raise funds enabling eligible Pitt students to study abroad, thereby experiencing another culture in depth. There are several different awards available.

**University Center for International Study Scholarships**

The Pitt Study Abroad Office offers a central listing of the range of scholarship possibilities available to help defray the cost of a study abroad program. Scholarships are managed by academic departments and schools such as the Center for Global Health or the College of General Studies.

**Women's Studies Student Research Fund**

Awards of up to $1,000 to support travel expenses, secretarial costs, research materials, or other direct costs for research related to the study of women, gender, and/or sexuality.

**EXTERNAL SUPPORT**

The following external sources also provide travel support for conferences and international study:
**Fulbright Fellowship Program**

Grants for individually designed study/research projects or for English Teaching Assistantships. During their program, Fulbrighters will meet, work, live with, and learn from the people of a host country, sharing daily experiences.

**Fulbright Hays**

Funding for students wishing to conduct their doctoral dissertations abroad.

**George Mitchell Scholarship**

National scholarship for students interested in pursuing one year of graduate work in an institution of higher education in Ireland or Northern Ireland.

**International Education Financial Aid**

Information on financial aid for U.S. and international students wishing to study abroad.

**Jack Wilson Fund**

Scholarship for students pursuing international opportunities that promote peace and community development.

**Katie Memorial Foundation**

Supports outstanding work in international public health by providing a one-time scholarship of up to $3,000 towards a fieldwork project. U.S. citizenship required.
<table>
<thead>
<tr>
<th>Organization</th>
<th>Fund Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Air Force</td>
<td>Federal Student Financial Assistance</td>
<td>Ford Foundation</td>
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<tr>
<td>American Heart Association</td>
<td>American Association of University Women</td>
<td>American Society for Microbiology</td>
</tr>
<tr>
<td>Society for Toxicology</td>
<td>American Cancer Society</td>
<td>American Chemical Society</td>
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<td>National Student Loan Data System</td>
<td>National Cancer Institute</td>
<td>National Science Foundation</td>
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<td>Congressional Black Caucus Foundation</td>
<td>Tobacco-Related Disease Research Program</td>
<td>Hispanic Scholarship Fund</td>
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<td>Alma Adams Scholarship for Outreach and Health Communication</td>
<td>National Institutes of Health</td>
<td>Agency for Healthcare Research and Quality</td>
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<td>Society for Epidemiologic Research</td>
<td>Society for Public Health Education (SOPHE)</td>
<td>Soros Scholarship for New Americans</td>
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<td>Evallee Schwarz Charitable Trust for Education</td>
<td>Institute Of Current World Affairs Fellowships</td>
<td>Ruth Kirschstein National Research Service Awards</td>
</tr>
<tr>
<td>American Indian/Alaska Native Scholarships</td>
<td>Ruth Taylor Award for Residents of Westchester County, NY</td>
<td>Agency for Healthcare Research and Quality</td>
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<tr>
<td>Pittsburgh Young Professionals Fund</td>
<td>Truman Foundation Scholarships</td>
<td>Delay the Real World Fellowship</td>
</tr>
<tr>
<td>Institute for Human Studies</td>
<td>Udall Environmental Fellowship</td>
<td>Davis-Putter Scholarships</td>
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<tr>
<td>Boren Fellowships</td>
<td>American Medical Writers Association Scholarship</td>
<td>Roybal Foundation</td>
</tr>
<tr>
<td>studentaid.ed.gov</td>
<td><a href="http://www.idealista.org">www.idealista.org</a></td>
<td></td>
</tr>
</tbody>
</table>

**External Funding Opportunities**

These organizations may have financial aid programs for public health students. Students can find listings of internship, fellowship, and post-doc opportunities in Pitt Bridges.

**Student Assistantships**

Graduate student assistants, graduate student researchers, teaching assistants, and teaching fellows are students who receive support in return for specified duties while gaining teaching, teaching-related, or research experience under the guidance of a faculty mentor.

Whenever available, assistantships and traineeships are awarded by the departments. There are no assistantships available through the Office of Student Affairs or the Dean's Office. Students may receive an assistantship from any department in the University, but there is no central listing of assistantships available.

**Descriptions**

**Traineeships**

A traineeship is money from a training grant allocated to students to support advanced study in a specified field. A traineeship may provide full or
partial tuition and/or living expenses. Usually, there is no service requirement. Several departments have traineeships available for students in particular concentrations.

**Assistantships**

An assistantship provides a full or partial tuition scholarship, a stipend, and individual health insurance coverage in exchange for performance of specified duties, usually in support of a faculty member's research project. Assistantship appointments can be full or part-time. Each department may award a limited number of student assistantships, usually to doctoral students. Students may also be awarded an assistantship by another University department. There is no central listing of University assistantships.

**Teaching Assistants**

A teaching assistant (TA) is a student who holds a teaching or teaching-related appointment made within the University regulations pertaining to teaching assistants. No teaching assistant shall be employed to teach post-baccalaureate courses.

**Teaching Fellows**

A teaching fellow (TF) is the same as a teaching assistant except that the teaching fellow is more educationally advanced or experienced, typically holding the equivalent of a master's degree. TFs should not be assigned to teach graduate courses. Exceptions may be made only in rare cases where in the individual shows clear evidence of outstanding skills in specialized areas and when the individual is directly supervised by faculty.

**Eligibility**

Students must be appointed through Pitt Public Health and must be enrolled at Pitt Public Health.

**Effort**

Full-time GSRs are expected to devote twenty hours per week to the research project they are assisting. GSRs may be required to work more hours if the research pertains to their thesis or dissertation. Time expenditure of part-time GSRs is proportional to this standard of twenty hours (i.e., half-time GSRs must devote ten hours per week to their research project, and more if the research pertains to their thesis).

TAs and GSAs have the same work obligation of twenty hours a week. However, their assignments will differ from a GSR and will not likely relate directly to their research interests.

**Appointments**

GSR, GSA, and TA appointments may be made annually for one to no more than three terms at a time (one academic year). Renewals are subject to satisfactory job performance and availability of funding.

**Evaluation**

At least once each year, the faculty supervisor must provide a written evaluation of a GSR/TA/GSA's performance to the student and to the department. A suggested evaluation form is available from the department administrator, who should request the evaluation in the spring term. A copy of the completed evaluation should be provided to the department administrator.

**Stipend**

The monthly stipend amount is set by the department within a range established by the University. Monthly stipend payments for part-time GSR positions will be proportional to this standard. The University does not set a different stipend level for TA and GSA positions.

**Tuition Scholarships**

Full-time GSR/GSA/TAs are eligible to receive full tuition scholarships to cover up to and including 15 credits per term. Part-time positions are eligible for partial tuition scholarships in accord with their appointments, i.e., a half appointment receives a scholarship for six credits and a quarter appointment covers three credits per term.

**Health Insurance**

GSRs, GSAs, and TAs are provided individual coverage under the UPMC Health Plan for graduate students. Family coverage is available at an additional cost to the student.

**University Policies**

Learn about University policies regarding student assistantships.

**Student Employment**

Registered students can work in part-time student positions for a maximum of 20 hours per week in the fall and spring terms, and 37.5 hours per week in the summer term. Graduate students do not generally receive funding through the federal work-study program.
After creating a PittSource account (free of charge), students have access to postings for summer jobs and regular student employment. Postings include positions within Pitt Public Health, at other University departments, and through off-campus employers.

**Individual Development Plan**

**A Tool for Outlining Professional Development Objectives**

A Graduate Student Independent Development Plan (IDP), is a tool for helping students and advisors outline and discuss short-term and long-term objectives to guide the student's professional development.

Graduate School of Public Health doctoral students and advisors are required to complete an IDP at least annually, typically timed to coincide with the required annual doctoral committee meeting. The school has an IDP template or students and advisors may substitute any other form that meets the same purpose (e.g. department-specific templates or templates provided by professional societies).

Completed IDP forms should be kept in student files at the department level. They should be treated as confidential student records. The Report on Requirements form for the doctoral preliminary exam and dissertation overview includes a checkbox that the committee should use to certify that an IDP has been completed within the six months prior to the exam.

IDPs are intended as a career development tool, and are not a substitute for a GSR evaluation that assesses job performance. For students whose GSR is closely tied to their dissertation research, it may be possible to combine the two, but it is still necessary to assess academic development and job performance separately.

IDPs are not required for master's students but they are highly recommended. This policy was voted and approved by the Educational Policies and Curriculum Committee and the GSPH Council on February 2015.

**Department Student Services Staff**

<table>
<thead>
<tr>
<th>Department</th>
<th>Contact</th>
<th>Telephone</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral and Community Health Sciences</td>
<td>Miriam Fagan</td>
<td>412-624-3107</td>
<td><a href="mailto:mpfagan@pitt.edu">mpfagan@pitt.edu</a></td>
</tr>
<tr>
<td>Biostatistics</td>
<td>Renee Valenti</td>
<td>412-624-3023</td>
<td><a href="mailto:biostat@pitt.edu">biostat@pitt.edu</a></td>
</tr>
<tr>
<td>Environmental and Occupational Health</td>
<td>Penny Weiss</td>
<td>412-383-7297</td>
<td><a href="mailto:pweiss@pitt.edu">pweiss@pitt.edu</a></td>
</tr>
<tr>
<td>Epidemiology</td>
<td>Lori Smith</td>
<td>412-383-5269</td>
<td><a href="mailto:smithl@edc.pitt.edu">smithl@edc.pitt.edu</a></td>
</tr>
<tr>
<td>Health Policy and Management</td>
<td>Jessica Dornin</td>
<td>412-624-3625</td>
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**GSPH-Epidemiology Funded Research & Practice**

**Funded Research and Training Projects**
The Department of Epidemiology, the largest department at Pitt Public Health, offers interdisciplinary research opportunities in the City Of Pittsburgh, which is recognized as an international hub for health care innovation and practice. The school is one of the nation's leading schools of public health, consistently ranking in the top tier among schools of public health in terms of NIH funding. The Department of Epidemiology accounts for about forty percent of the school's total grant funding.

The Department of Epidemiology has a central theme of "Teaching and Prevention through Quality Research," and is involved in both research and prevention activities. The department's primary faculty members have a varied range of research interests reflected in more than 90 funded projects and more than 500 publications each year. Faculty, staff and student participation in regular seminars provides a rich collaborative environment.

Based on faculty research, the department offers many areas of emphasis including aging, applied public health, cancer, cardiovascular and diabetes, clinical trials and methods, environmental, global health, infectious disease, injury prevention, molecular and genetics, neuroepidemiology, obesity and nutritional, prevention, lifestyle and physical activity, psychiatric, reproductive, perinatal and pediatric and women's health epidemiology.

Research programs include those with global reach in over a dozen nations including: maternal and child health (rural India); functional disability in aging (rural India); diabetes (Rwanda), hypertension, cardiovascular disease (rural India, Tobago); impaired kidney function (Tobago); infectious disease/HIV (Brazil, India, and Mozambique); bone health (Tobago); prostate cancer (Tobago, Nigeria); cancer (China); environmental health (China); application of the Internet and Mobile technology for global health and prevention; Infectious diseases/dengue modeling (Thailand, Cambodia, Laos, Vietnam, Philippines, Singapore, Malaysia, Taiwan, Brazil, Columbia); atherosclerosis, coronary heart disease, Alzheimer's disease, chronic obstructive pulmonary disease (Japan).

Research Innovations

in risk assessment
- use of advanced imaging methods
- use of biomarkers, including genetic profiles and personal monitoring
- use of activity monitoring and environmental (air and water quality) assessment
- use of molecular tools to detect and study emerging bacterial infections - in data management and analysis
- adaptive designs for clinical trials
- geographic modeling
- temporal modeling

Research Highlights

- through the Center for Aging and Population Health (CAPH, a Centers for Disease Control and Prevention (CDC) Research Center, supporting data collection for several large studies, primarily in older adults but also in other groups
- through CAPH, addressing healthy aging by promoting a comprehensive community prevention program called the 10 Keys to Healthy Aging
- with funding from the National Institutes of Health, currently conducting the Lifestyles and Independence for the Elderly Trial, Testosterone Trial, and Aspirin to Prevent Events in the Elderly Trial
- engaging in ongoing follow-up for the Epidemiology of Diabetes Complications study, Women's Health Initiative, Cardiovascular Health Study, Study of Osteoporotic Fracture, and Men's Osteoporosis Study

Collaborating Partners
- Pitt Public Health departments
- Pitt Department of Psychiatry
- University of Pittsburgh Cancer Institute
- Magee Womens Research Institute
- Allegheny County Health Department
- Pennsylvania Department of Health

GSPH-Epidemiology Areas of Research Emphasis

Areas of Emphasis
Students take a series of core courses in epidemiology and public health, then may choose to enroll in courses in one or several Areas of Emphasis. Faculty in each of these areas have major research and/or community service programs that provide excellent facilities for student research and field training, and some have training grants. Summaries of each area, and their specific details, are provided below.

Faculty members in each of these areas offer major research and/or community service programs that provide excellent facilities for student research and field training.

Aging Epidemiology
Applied Public Health Epidemiology
Cancer Epidemiology
Cardiovascular & Diabetes Epidemiology
Clinical Trials & Methods
Environmental Epidemiology
Global Health Epidemiology
Infectious Disease Epidemiology
Injury Prevention Epidemiology
Molecular & Genetic Epidemiology
Neuroepidemiology
Obesity & Nutritional Epidemiology
Prevention, Lifestyle & Physical Activity Epidemiology
Psychiatric Epidemiology
Reproductive, Perinatal & Pediatric Epidemiology
Women's Health Epidemiology

Faculty Contact: Anne Newman, MD, MPH

- Areas of research broadly include: successful aging and longevity, physical function, activity and disability, osteoporosis, vascular aging, sarcopenia, brain aging and mobility.
- Training grant: All trainees participate in a three course series on aging, hands-on research training, research conferences and seminar series. Additional career development opportunities for post-doctoral students are available.
- All doctoral trainees design, implement, analyze data, and report the results of an independent study as part of the program with a goal of submitting three manuscripts for publication. Trainees are encouraged to present their research in a variety of venues, including GSPH Dean's Day.
- Faculty members primarily working in this area include: Robert Boudreau, Jane Cauley, Nancy Glynn, Lewis Kuller, Iva Miljkovic, Anne Newman, Caterina Rosano, Andrea Rosso, Elsa Strotmeyer, Joseph Zmuda
- Collaborating Faculty include: Steve Albert, Howard Aizenstein, Steve Belle, Emma Barinas-Mitchell, Jen Brach, Maria Brooks, Clare Bunker, Lora Burke, Mary Ganguli, Tiffany Gary-Webb, Susan Greenspan, Joseph Hanlon, John Jakicic, Candy Kammerer, Oscar Lopez, Neelesh Nadkarni, Karen Matthews, Ryan Minster, Trevor Orchard, Sara Piva, Chip Reynolds, Akira Sekikawa, Jian-Min Yuan

Faculty Contact: Thomas Songer, PhD

- Areas of focus include: population health status assessment; infectious and chronic disease surveillance and control, maternal and child health epidemiology and environmental health epidemiology.
- Opportunities include practicum experiences, independent study and other applied projects. An enhanced practicum experience is the Summer Institute in Applied Public Health at the Allegheny Health Department.
- Faculty members currently working in this area include LuAnn Brink, Marshal Ma, Kristen Mertz, and Thomas Songer.

Faculty Contacts: Jian-Min Yuan, MD, PhD

- An advanced course is offered in cancer epidemiology on topics of surveillance, etiology and prevention.
- Research focus areas include: breast cancer and hormonal factors; environmental exposures determined by objective biomarkers and gene-environment interaction in the etiology of and susceptibility to cancer, including cancers of the lung, liver, colorectum, urinary bladder, breast, ovary
and prostate; molecular epidemiology; cancer screening and related health services; diet as a source of risk and protective factors of cancer; obesity and weight loss for cancer prevention.
- Cancer Epidemiology and Prevention Program Seminar series at the University of Pittsburgh Cancer Institute, an National Cancer Institute-designated Comprehensive Cancer Center.
- Faculty members currently working in this area include: Clareann Bunker, Jane Cauley, Brenda Diergaarde, Lewis Kuller, Faina Linkov, Jian-Min Yuan.

Faculty Contact: Akira Sekikawa, MD, MPH, PhD

- Areas of research broadly include: cardiovascular aging and longevity; body composition and obesity; cardiovascular epidemiology; physical activity and subclinical CVD; novel CVD risk factors, high risk and ethnic subpopulations; vascular health; hypertension; peripheral nerve function; lipid metabolism, and evaluation of cardiac interventions.
- Diabetes areas of research include extensive programs in both Type 1 and Type 2 diabetes. For type 1 diabetes, these include a 30 year follow up study of childhood onset diabetes, (Pittsburgh Epidemiology of Diabetes Complications Study) and the national DCCT/EDIC study also with over 25 years follow up. For type 2 diabetes the Diabetes Prevention Program Outcomes Study and the translation of the interventions to the community form the basis of much activity including a Diabetes Prevention Support Center.
- Training grant: Designed to provide concentrated, tailored training in the quality collection of subclinical atherosclerotic measures, organized around four major research strengths: vascular aging, women's health, genetics and high risk/international populations. All trainees will participate in course work, research field work, and professional development (including CVD and diabetes journal clubs, independent research, grant writing, manuscript preparation and conference presentations).
- Faculty members currently working in this area include: Emma Barinas-Mitchell, Marnie Bertolet, Maria Mori Brooks, Clareann Bunker, Tina Costacou, Samar El Khoudary, Linda Fried, M. Kaye Kramer, Andrea Kriska, Allison Kuipers, Lewis Kuller, Rachel Mackey, Oscar Marroquin, Karen Matthews, Iva Miljkovic, Matthew Muldoon, Suresh Mulukutla, Anne Newman, Trevor Orchard, Akira Sekikawa, Thomas Songer, Elsa Strotmeyer, Evelyn Talbott.

Faculty Contact: Steven Belle, PhD, M.Sc.Hyg.

- The activities of the Epidemiologic Methods group contribute to all areas of emphasis, specializing in design and conduct of studies including adaptive trials, survey sampling, and statistical methods.
- The didactic component includes three general methods courses and a design of clinical trials course. The journal club has covered topics including Latent Variable Modeling in Epidemiology and Causal Inference.
- The Epidemiology Data Center (EDC) was established in 1980 as a section of the Department of Epidemiology, founded by Katherine M. Detre, M.D., Dr.P.H., and under the co-direction of Steven Belle, PhD, Maria Brooks, PhD, and Stephen Wisniewski, PhD. The EDC has collaborated in over 100 research studies sponsored by the National Institutes of Health and other agencies. Presently, the EDC coordinates data management and analysis activities for 26 research projects sponsored by federal and various other governmental or private agencies and by industry. For more information, see the EDC web-site.
- The EDC hosts the CTSI Design, Biostatistics and Epidemiology (DBE) Core providing services to researchers at all stages of the research spectrum. Services include: grant application development and the pairing of researchers with statistical collaborators. It also hosts a Journal Club offering topics such as Propensity Scores and Survey Sampling.
- Faculty members currently working in this area include: Emma Barinas-Mitchell, GK Balasubramani, Steven Belle, Marnie Bertolet, Robert Boudreau, Maria Mori Brooks, Clareann Bunker, Yona Cloonan, Samar El Khoudary, Anthony Fabio, Sheryl Kelsey, Wendy King, Ashley Naimi, Rachel Mackey, Bedda Rosario, Kristine Ruppert, Robert Schoen, Stephen Wisniewski.
- Additional collaborators from the Department of Biostatistics include: Jong Jeong, and Abdus Wahed.

Faculty Contact: Evelyn Talbott, DrPH, MPH

- Areas of research include: air pollution and cardiovascular disease outcomes, cancer epidemiology and cancer cluster investigation, ambient air lead and PM2.5 and health effects, childhood autism and personal and environmental risk factors.
- Graduate student research assistantships for CDC funded projects involving ambient air lead and childhood lead poisoning, childhood autism and the environment , PM2.5 air pollution and cardiopulmonary outcomes.
All doctoral trainees conduct an independent study with the requirement to submit three manuscripts for publication. Hands on training in the area of environmental epidemiology with collaborations with over 23 state health departments through CDC environmental public health tracking programs.

Faculty members currently working in this area include: Jennifer Adibi, Gary Marsh, Evelyn Talbott, and Ada Youk.

Additional collaborators from the Department of Biostatistics include: Vincent Arena, and Jeannine Buchanan and from the Allegheny County Health Department: LuAnn Brink and Kristen Mertz.

Faculty Contact: Clareann Bunker, PhD

Areas of research include: maternal and child health (rural India); functional disability in aging (rural India); diabetes (Rwanda), hypertension, cardiovascular disease (rural India, Tobago); impaired kidney function (Tobago); infectious disease/HIV (Brazil, India, and Mozambique); bone health (Tobago); prostate cancer (Tobago, Nigeria); cancer (China); environmental health (China); application of the Internet and Mobile technology for global health and prevention. Infectious diseases/dengue modeling (Thailand, Cambodia, Laos, Vietnam, Philippines, Singapore, Malaysia, Taiwan, Brazil, Columbia); atherosclerosis, coronary heart disease, alzheimer's disease, chronic obstructive pulmonary disease (Japan).

Development of the internet Supercourse with 50,000+ members from over 170 countries, teaching over 50,000,000.

Development of Project Tycho, a global health data repository released in November of 2013 providing open access to high resolution disease data for research, training, and public health public policy at www.tycho.pitt.edu.

Faculty members currently working in this area include: Donald Burke, Clareann H. Bunker, Jane Cauley, Catherine Haggerty, Lee H. Harrison, M. Kaye Kramer, Andrea Kriska, Allison Kuipers, Ronald LaPorte, Faina Linkov, Iva Miljkovic, Jean Nachega, Anne Newman, Trevor Orchard, Akira Sekikawa, Evelyn Talbott, Willem van Panhuis, Jian-Min Yuan, Joseph Zmuda.

Faculty Contact: Lee Harrison, MD

Areas of research include: epidemiology and molecular epidemiology of serious, vaccine-preventable, drug-resistant and hospital-associated bacterial infections; prevention of HIV infection; infectious diseases surveillance; computational modeling of disease and intervention strategies; use of geotemporal analysis in infectious diseases.

Training grants: 1) Dengue and vaccine-preventable and drug-resistant bacterial infections in Brazil and 2) prevention of HIV infection in Brazil, India, and Mozambique.

All doctoral trainees conduct an independent study with the requirement to submit three manuscripts for publication. Trainees can choose traditional epidemiology or molecular epidemiology as the basis of their doctoral research.

Faculty members currently working in this area include: Steven Belle, Donald Burke, Catherine Haggerty, Lee Harrison, Lawrence Kingsley, Jean Nachega, Willem van Panhuis, and collaborating from the Allegheny County Health Department: Kristen Mertz.

Faculty Contacts: Tom Songer, PhD, MPH, Anthony Fabio, PhD, MPH

Applied research in broad areas of unintentional and intentional injury including but not limited to injury from motor vehicle crash, falls, natural disasters, poisoning, head trauma, criminal violence, child maltreatment, domestic violence, and treatment of injury.

Emphasis on the application of epidemiologic methods in population and clinical settings to understand key risk and prognostic factors for primary and secondary prevention of injury.

Trainees participate in academic training in injury epidemiology and/or injury prevention and control and applied research training on specific injury and violence topics using mentors from multiple disciplines in the fields of epidemiology, statistics, trauma, behavioral sciences, surgery, psychiatry, criminology and others.

Faculty members currently working in this area include: Steven Albert, Anthony Fabio, Thomas J. Songer, Evelyn Talbott, Stephen Wisniewski, Mazen Zenati.
Faculty Contact: Joseph Zmuda, PhD

- Areas of current research broadly include aging, cancer, reproduction and early development, cardiovascular disease, diabetes, obesity, sarcopenia, and osteoporosis.
- Requirements vary depending on student background and needs, and are offered in collaboration with the Departments of Environmental and Occupational Health and Human Genetics in the Graduate School of Public Health.
- Didactic and laboratory courses are offered.
- Faculty members currently working in this area include: Jennifer Adibi, Clareann H. Bunker, Brenda Diergaarde, Allison Kuipers, Iva Miljkovic, Anne Newman, Jian-Min Yuan, Joseph Zmuda.
- Collaborators from other departments include: Robert Ferrell, Candace Kammerer, Ilyas Kamboh, Ryan Minster, Dan Weeks.

Faculty Contact: Caterina Rosano, MD, MPH

- Focuses on the application of epidemiology methods and cutting-edge neuroimaging methodologies in population and clinical studies to enhance etiological research and evaluation of specific therapies in the disorders of the central nervous system.
- Targets the interdependent nature of clinical characterization, epidemiological methods and multimodal assessment of disorders of the central nervous system through rigorous academic training and applied research opportunities.
- Maximizes the potential for applied research training and for successful field placements of the trainees through multidisciplinary mentored work with leaders in the fields of epidemiology, psychiatry, neuroscience, neurology, and others.
- Read more about Specialization in Neuroepidemiology
- Faculty members currently working in this area include: Jane Cauley, Mary Ganguli, Lewis Kuller, Karen Matthews, Trevor Orchard, Gale Richardson, Caterina Rosano, Bedda Rosario, Andrea Rosso, Evelyn Talbott.
- Collaborators from other departments include: Howard Aizenstein (psychiatry), James Becker (psychiatry), Kirk Erickson (psychology), Peter Gianaros (psychiatry), Samay Jain (neurology), Oscar Lopez (neurology), Amy Wagner (psychology).

Faculty Contact: Lisa Bodnar, PhD

- Areas of research include: nutritional epidemiology, obesity epidemiology, body composition, bariatric surgery, dietary intake, and supplement use.
- Relevant courses include Nutritional Epidemiology, Nutrition Assessment Laboratory.
- Faculty members currently working in this area include: Lisa Bodnar, Lora Burke, Samar El Khoudary, Wendy King, M. Kaye Kramer, Andrea Kriska, Iva Miljkovic, Akira Sekikawa, Lauren Simkin-Silverman.

Faculty Contacts: Andrea Kriska, PhD, MS

- This program involves translating the proven benefits of lifestyle intervention on a broad range of health outcomes including type 2 diabetes, cardiovascular disease and obesity. This program encompasses the conceptual and practical foundation needed for such public health translation initiatives. Learning objectives include a thorough understanding of disease prevention, behavioral intervention theory and lifestyle intervention training, along with a critical understanding of the methodological issues in designing and evaluating these efforts. Course work includes formal training and a practicum in which students gain community-based experience administering the lifestyle intervention, which is comprised of weight loss, increased physical activity and healthy eating.
- An integral part of this AOE in the Department of Epidemiology is the Diabetes Prevention Support Center (DPSC). The DPSC is comprised of Epidemiology faculty who were originally part of the Diabetes Prevention Program, the national multi-center clinical trial that demonstrated the benefits of lifestyle intervention in preventing a chronic disease. The DPSC serves as the central training center for lifestyle intervention delivery as well as provision of subsequent post-training support.
- The Department of Epidemiology is also the home of the Physical Activity Resource Center for Public Health (PARC-PH) which was developed to provide the physical activity assessment information and lifestyle intervention tools necessary to carry out prevention/translation efforts.
- Faculty members currently working in this area include: Lisa Bodnar, Joyce Bromberger, Lora Burke, Margaret Conroy, Jacqueline Dunbar-Jacob, Nancy Glynn, Wendy King, M. Kaye Kramer, Andrea Kriska, Lewis Kuller, Faina Linkov, Karen Matthews, Kathleen McTigue, Trevor Orchard, Lauren Simkin-Silverman, Elizabeth Venditti, Tiffany Gary-Webb.
The Psychiatric Epidemiology Training Program focuses on the acquisition of epidemiological, biostatistical, and psychiatric concepts and methods, and on their application to research in the field of psychiatric disorders. Training is accomplished through course work in epidemiology and biostatistics, and through courses in psychiatric epidemiology that were designed specifically for the PET Program. The training experience includes the opportunity to work on research projects with faculty mentors who are active researchers in psychiatry and epidemiology within the Graduate School of Public Health (GSPH) and the Department of Psychiatry within the University of Pittsburgh School of Medicine. Faculty members currently working in this area include: David Brent, Joyce Bromberger, Tammy Chung, Marie Cornelius, Nancy Day, Mary Amanda Dew, John Donovan, Mary Ganguli, Karen Matthews, Margaret McDonald, Kenneth Perkins, Gale Richardson, Stephen Wisniewski.

Areas of research broadly include: causes of pregnancy complications and adverse outcomes including spontaneous abortion, stillbirth, preterm birth, low birth weight, intrauterine growth restriction, and preeclampsia; obesity and nutrition among pregnant women; fertility and contraception; breastfeeding; and sexually transmitted infections. A major clinical site for collaboration is Magee-Womens Hospital, the obstetrics, gynecologic, and reproductive sciences specialty hospital associated with the University of Pittsburgh Medical Center. Global health research experiences are available through a study of pregnancy being conducted in India. Training program provides concentrated, tailored training on the patterns, risk factors, and interventions that might improve reproductive, perinatal, and pediatric health, as well as women's health across the lifespan. All trainees will participate in coursework, research field work, and professional development including courses in Reproductive Epidemiology, Epidemiology of Women's Health, and Pediatric Epidemiology; a Reproductive, Perinatal and Pediatric Epidemiology Journal Club; a Maternal and Child Health Journal Club; independent research; grant writing; manuscript preparation; and scientific conference presentations. Trainees who engage in community service activities in addition to completing the didactic requirements will be eligible for a Women's Health Specialization, which honors trainees' combined interests in women's health research and community outreach. Faculty members currently working in this area include: Jennifer Adibi, Emma Barinas-Mitchell, Lisa Bodnar, Joyce Bromberger, Clareann H. Bunker, Janet Catov, Jane Cauley, Yona Cloonan, Marie Cornelius, Nancy Day, Samar El Khoudary, Catherine Haggerty, Sheryl Kelsey, Andrea Kriska, Lewis Kuller, Rachel Mackey, Dara Mendez, Evelyn Talbott, Nina Markovic, Karen Matthews, Gale Richardson, James Roberts, Rebecca Thurston.

Areas of research broadly include: women's health across the lifespan, menopause and late life. Menopause and Aging focuses on furthering our understanding of chronological aging versus ovarian aging. Emphasis is placed on a broad range of topic areas including the skeleton, cardiovascular disease, mental health, physical function and disability, body composition and lifestyle. Faculty members currently working in this area include: Emma Barinas-Mitchell, Lisa Bodnar, Joyce Bromberger, Maria Mori Brooks, Clareann Bunker, Janet Catov, Jane Cauley, Marie Cornelius, Nancy Day, Natacha DeGenna, Samar El Khoudary, Catherine Haggerty, Sheryl Kelsey, Andrea Kriska, Lewis Kuller, Rachel Mackey, Nina Markovic, Karen Matthews, Dara Mendez, Gale Richardson, Akira Sekikawa, Evelyn Talbott, Rebecca Thurston.

GSPH Primary Faculty

Burke, Donald S. | Epidemiology | Dean and Distinguished University Professor | MD, Harvard University

Adibi, Jennifer J. | Epidemiology | Assistant Professor | ScD, Harvard University; MPH, Columbia University

Albert, Steven M. | Behavioral & Community Health Sciences | Professor | PhD, University of Chicago; MSc, Columbia University; MA, University of Chicago
Amoscato, Andrew | Environmental & Occupational Health | Research Associate Professor | PhD, University of Texas, Houston

Anderson, Stewart J. | Biostatistics | Professor | PhD, University of Colorado; MA, University of Kansas

Ayyavoo, Velpandi | Infectious Diseases & Microbiology | Professor | PhD, Madurai Kamaraj University; MSc, Thiagarajar College

Bandos, Andriy I. | Biostatistics | Assistant Professor | PhD, University of Pittsburgh; MS, Kharkiv National University

Bandos, Hanna | Biostatistics | Research Assistant Professor | PhD, University of Pittsburgh; MS, Kharkiv National University

Barchowsky, Aaron | Environmental & Occupational Health | Professor | PhD, Duke University

Barinas-Mitchell, Emma J.M. | Epidemiology | Assistant Professor | PhD, University of Pittsburgh

Barratt-Boytes, Simon | Infectious Diseases & Microbiology | Professor | PhD, University of California, Davis

Barron, Gerald Mark | Health Policy & Management | Associate Professor | MPH, University of Pittsburgh

Bear, Todd M. | Behavioral & Community Health Sciences | Assistant Professor | PhD, University of Pittsburgh; MPH, University of Pittsburgh

Bein, Kiflai | Environmental & Occupational Health | Assistant Professor | PhD, Wayne State University; MS, Addis Ababa University

Belle, Steven H. | Epidemiology | Professor | PhD, University of Michigan; MScHyg, University of Pittsburgh

Bertolet, Marnie | Epidemiology | Assistant Professor | PhD, Carnegie Mellon University; MS, Carnegie Mellon University; M.Eng, Cornell University

Bility, Moses Turkle | Infectious Diseases & Microbiology | Assistant Professor | PhD, Pennsylvania State University

Bodnar, Lisa M. | Epidemiology | Associate Professor | PhD, University of North Carolina; MPH, University of North Carolina

Boudreau, Robert M. | Epidemiology | Assistant Professor | PhD, University of Pittsburgh

Bromberger, Joyce T. | Epidemiology | Professor | PhD, University of Pittsburgh; MSW, University of Pittsburgh

Brooks, Maria Mori | Epidemiology | Professor | PhD, University of North Carolina; MA, Harvard University

Bryce, Cindy L. | Health Policy & Management | Associate Professor | PhD, Carnegie Mellon University; MPhil, Carnegie Mellon University

Buchanich, Jeanine M. | Biostatistics | Research Associate Professor | PhD, University of Pittsburgh; MEd, University of Pittsburgh; MPH, University of Pittsburgh

Burke, Jessica G. | Behavioral & Community Health Sciences | Associate Professor | PhD, Johns Hopkins University; MHS, Johns Hopkins University

Castle, Nicholas G. | Health Policy & Management | Professor | PhD, Pennsylvania State University; MHA, Wilkes University

Cauley, Jane A. | Epidemiology | Distinguished Professor | DrPH, University of Pittsburgh; MPH, University of Pittsburgh

Cecchini, Reena S. | Biostatistics | Research Assistant Professor | PhD, University of Pittsburgh; MS, University of Pittsburgh

Chen, Yue | Infectious Diseases & Microbiology | Assistant Professor | PhD, University of Pittsburgh; MD, Dalian Medical University; MS, Xian Medical University

Cloonan, Yona Keich | Epidemiology | Assistant Professor | PhD, University of Washington; MS, University of Washington; MS, University of Rochester

Cole, Evan S. | Health Policy & Management | Research Assistant Professor | PhD, Tulane University; MPH, University of Minnesota

Costacou, Tina | Epidemiology | Associate Professor | PhD, University of South Carolina; MSc, University of Massachusetts
Costantino, Joseph P. | Biostatistics | Distinguished Service Professor | DrPH, University of Pittsburgh; MPH, University of Pittsburgh

Degenholtz, Howard B. | Health Policy & Management | Associate Professor | PhD, University of Minnesota

Demirci, F. Yesim | Human Genetics | Associate Professor | MD, Istanbul University

Di, YuanPu | Environmental & Occupational Health | Associate Professor | PhD, State University of New York, Buffalo; MBA, University of California, Davis

Diergaarde, Brenda | Epidemiology | Associate Professor | PhD, Wageningen University; MSc, Leiden University

Ding, Ying | Biostatistics | Assistant Professor | PhD, University of Michigan; MS, University of Michigan; MA, Indiana University

Documet, Patricia I. | Behavioral & Community Health Sciences | Associate Professor | DrPH, University of Pittsburgh; MD, Universidad Peruana Cayetano Heredia; MPH, University of Pittsburgh

Donohue, Julie M. | Health Policy & Management | Associate Professor | PhD, Harvard University

Driessen, Julia | Health Policy & Management | Assistant Professor | PhD, Johns Hopkins University; MA, Johns Hopkins University

Durst, Andrea L. | Human Genetics | Assistant Professor | DrPH, University of Kentucky; MS, University of North Carolina, Greensboro

Egan, James | Behavioral & Community Health Sciences | Visiting Research Assistant Professor | PhD, University of Pittsburgh; MPH, Boston University

El Khoudary, Samar R. | Epidemiology | Associate Professor | PhD, University of Pittsburgh; MPH, Al-Quds University

Elias, Thistle | Behavioral & Community Health Sciences | Visiting Assistant Professor | DrPH, University of Pittsburgh; MPA, University of Pittsburgh

Fabio, Anthony | Epidemiology | Associate Professor | PhD, University of Pittsburgh; MPH, University of Pittsburgh

Fabisiak, James P. | Environmental & Occupational Health | Associate Professor | PhD, Pennsylvania State University; MS, New York State College of Veterinary Medicine

Feingold, Eleanor | Human Genetics | Professor | PhD, Stanford University

Felter, Elizabeth M. | Behavioral & Community Health Sciences | Assistant Professor | DrPH, University of Pittsburgh; MA, University of Georgia

Finegold, David N. | Human Genetics | Professor | MD, University of Pittsburgh

Fitz, Nicholas | Environmental & Occupational Health | Research Assistant Professor | PhD, Duquesne University

Frank, Linda Rose | Infectious Diseases & Microbiology | Professor | PhD, University of Pittsburgh; MSN, University of Pittsburgh

Friede, Samuel A. | Health Policy & Management | Assistant Professor | MBA, University of Chicago

Friedman, Mackey R. | Infectious Diseases & Microbiology | Assistant Professor | PhD, University of Pittsburgh; MPH, University of Pittsburgh

Friedman, Mark S. | Behavioral & Community Health Sciences | Assistant Professor | PhD, University of Pittsburgh; MPA, University of Pittsburgh; MSW, University of Pittsburgh

Garland, Richard | Behavioral & Community Health Sciences | Assistant Professor | MSW, University of Pittsburgh

Gary-Webb, Tiffany L. | Behavioral & Community Health Sciences | Associate Professor | PhD, Johns Hopkins University; MHS, Johns Hopkins University

Glynn, Nancy W. | Epidemiology | Assistant Professor | PhD, University of Pittsburgh; MEd, University of Virginia

Gollin, Susanne M. | Human Genetics | Professor | PhD, Northwestern University; MS, Northwestern University
Goundappa, Balasubramani K. | Epidemiology | Research Assistant Professor | PhD, University of Madras; MPhil, University of Madras; MS, University of Madras

Grefenstette, John J. | Health Policy & Management | Professor | PhD, University of Pittsburgh; MS, University of Pittsburgh

Grubs, Robin E. | Human Genetics | Assistant Professor | PhD, University of Pittsburgh; MS, University of Pittsburgh

Gupta, Phalguni | Infectious Diseases & Microbiology | Professor | PhD, University of Wisconsin; MS, University of Wisconsin; MS, University of Calcutta

Haggerty, Catherine L. | Epidemiology | Associate Professor | PhD, University of Pittsburgh; MPH, University of Pittsburgh

Hartman, Amy L. | Infectious Diseases & Microbiology | Assistant Professor | PhD, University of Pittsburgh

Hawk, Mary E. | Behavioral & Community Health Sciences | Assistant Professor | DrPH, University of Pittsburgh; MSW, University of Pittsburgh

Hershey, Tina Batra | Health Policy & Management | Assistant Professor | JD, George Washington University; MPH, George Washington University

Huang, Zhentai | Environmental & Occupational Health | Research Instructor | PhD, Peking Union Medical College

Huber, George A. | Health Policy & Management | Professor | JD, Duquesne University; MSSM, University of Southern California; MSIE, University of Pittsburgh

Jalal, Hawre | Health Policy & Management | Assistant Professor | PhD, University of Minnesota; MS, University of Minnesota; MD, University of Suleimani

James, III, A. Everette | Health Policy & Management | Professor | JD, Illinois Institute of Technology; MBA, Illinois Institute of Technology

Jarlenski, Marian | Health Policy & Management | Assistant Professor | PhD, Johns Hopkins University; MPH, Yale University

Jeong, Jong H. | Biostatistics | Professor | PhD, University of Rochester; MA, University of Rochester; MS, Kang-Won National University

Kagan, Valerian E. | Environmental & Occupational Health | Professor | PhD, M.V. Lomonosov Moscow State University; DSc, USSR Academy of Sciences; MS, M.V. Lomonosov Moscow State University

Kamboh, M. Ilyas | Human Genetics | Professor | PhD, Australian National University; MSc, University of Punjab

Kammerer, Candace M. | Human Genetics | Associate Professor | PhD, Ohio State University

Kang, Chaeryon | Biostatistics | Assistant Professor | PhD, University of North Carolina; MS, Ewha Womans University

Kapralov, Oleksandr O. | Environmental & Occupational Health | Research Assistant Professor | PhD, Ukrainian Academy of Sciences; DSc, National Taras Shevchenko Kyiv University; MS, Kiev State University

Keohavong, Phouthone | Environmental & Occupational Health | Associate Professor | PhD, Louis Pasteur University; DSc, Louis Pasteur University; MS, Louis Pasteur University

King, Wendy C. | Epidemiology | Associate Professor | PhD, University of Pittsburgh

Kingsley, Lawrence A. | Infectious Diseases & Microbiology | Professor | DrPH, University of Pittsburgh; MPH, University of Pittsburgh

Koldanova, Radosveta P. | Environmental & Occupational Health | Research Associate Professor | PhD, Bulgarian Academy of Sciences; MD, Medical Academy of Bulgaria

Krafty, Robert | Biostatistics | Associate Professor | PhD, University of Pennsylvania; MA, University of Pennsylvania

Krier, Sara | Infectious Diseases & Microbiology | Assistant Professor | PhD, University of Pittsburgh; MPH, University of Pittsburgh

Kriska, Andrea M. | Epidemiology | Professor | PhD, University of Pittsburgh; MS, University of Pittsburgh

Kuipers, Allison | Epidemiology | Visiting Assistant Professor | PhD, University of Pittsburgh
Kumar, Supriya | Behavioral & Community Health Sciences | Visiting Research Assistant Professor | PhD, Carnegie Mellon University; MPH, University of Pittsburgh

Kurland, Brenda F. | Biostatistics | Research Associate Professor | PhD, University of Washington; MS, University of Washington; EdM, Harvard University

Lefterov, Iliya M. | Environmental & Occupational Health | Research Associate Professor | PhD, Bulgarian Academy of Sciences; MS, Medical Academy of Bulgaria

Leikauf, George D. | Environmental & Occupational Health | Professor | PhD, New York University; MS, New York University

Lin, Yan | Biostatistics | Research Associate Professor | PhD, University of Pittsburgh; PhD, University of Michigan; MS, University of Pittsburgh

Mackey, Rachel H. | Epidemiology | Assistant Professor | PhD, University of Pittsburgh; MPH, University of Pittsburgh

Mailliard, Robbie B. | Infectious Diseases & Microbiology | Assistant Professor | PhD, University of Amsterdam

Mair, Christina F. | Behavioral & Community Health Sciences | Assistant Professor | PhD, University of Michigan; MPH, University of Washington

Marques Jr., Ernesto T. A. | Infectious Diseases & Microbiology | Associate Professor | MD, Universidade Federal de Pernambuco; PhD, Johns Hopkins University

Marsh, Gary M. | Biostatistics | Professor | PhD, University of Pittsburgh; MS, University of Pittsburgh

Martinson, Jeremy J. | Infectious Diseases & Microbiology | Assistant Professor | DPhil, Oxford University

Matthews, Derrick D. | Infectious Diseases & Microbiology | Assistant Professor | PhD, University of North Carolina, Chapel Hill; MPH, University of Michigan

Mattila, Joshua T. | Infectious Diseases & Microbiology | Assistant Professor | PhD, University of Minnesota, Minneapolis-St. Paul

Mendez, Dara D. | Epidemiology | Assistant Professor | PhD, University of North Carolina; MPH, University of North Carolina

Miljkovic, Iva | Epidemiology | Assistant Professor | PhD, University of Pittsburgh; MD, University of Novi Sad

Milosevic, Jadranka | Environmental & Occupational Health | Visiting Research Assistant Professor | PhD, University of Giessen

Minster, Ryan L. | Human Genetics | Assistant Professor | PhD, University of Pittsburgh; MSIS, University of Pittsburgh

Mor, Ryan M. | Biostatistics | Research Assistant Professor | PhD, University of Pittsburgh

Nachega, Jean B. | Epidemiology | Associate Professor | PhD, University of Cape Town; MD, University of Louvain; MPH, Johns Hopkins University

Naimi, Ashley I. | Epidemiology | Assistant Professor | PhD, University of North Carolina; MSc, University of Montreal

Newman, Anne B. | Epidemiology | Professor | MD, University of Pittsburgh; MPH, University of Pittsburgh

Normolle, Daniel | Biostatistics | Associate Professor | PhD, State University of New York, Binghamton; MA, State University of New York, Binghamton

Opresko, Patricia Lynn | Environmental & Occupational Health | Associate Professor | PhD, Pennsylvania State University

Orchard, Trevor J. | Epidemiology | Distinguished Professor | MMedSci, University of Nottingham; MBBCh, University of Wales

Ortiz, Luis A. | Environmental & Occupational Health | Professor | MD, Universidad Pontificia Bolivariana

Padiath, Quasar Saleem | Human Genetics | Assistant Professor | PhD, Indian Institute of Science; MBBS, Kilpauk Medical College

Park, Yong Seok | Biostatistics | Assistant Professor | PhD, University of Michigan; MS, University of Michigan; ME, Tsinghua University

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Parker, Lisa S. | Human Genetics | Professor | PhD, University of Pittsburgh; MA, University of Pittsburgh

Pearce, Linda | Environmental & Occupational Health | Research Assistant Professor | PhD, Iowa State University

Peterson, James | Environmental & Occupational Health | Associate Professor | PhD, University of Essex

Piazza, Paolo A. | Infectious Diseases & Microbiology | Research Assistant Professor | PhD, University of Milan

Pitt, Bruce | Environmental & Occupational Health | Professor | PhD, Johns Hopkins University; MHS, Johns Hopkins University

Rappoccio, Giovanna | Infectious Diseases & Microbiology | Assistant Professor | PhD, University of Milan

Rinaldo, Charles R. | Infectious Diseases & Microbiology | Professor | PhD, University of Utah

Roberts, Mark S. | Health Policy & Management | Professor | MD, Tufts University; MPP, Harvard University

Rohrer, Wesley M. | Health Policy & Management | Associate Professor | PhD, University of Pittsburgh; MBA, University of Pittsburgh

Roman, Beth L. | Human Genetics | Associate Professor | PhD, University of Wisconsin

Rosano, Caterina | Epidemiology | Professor | MD, University of Palermo; MPH, University of Pittsburgh

Rosario-Rivera, Bedda L. | Epidemiology | Assistant Professor | PhD, University of Pittsburgh; MPH, University of Puerto Rico

Rosso, Andrea L. | Epidemiology | Assistant Professor | PhD, Drexel University; MPH, Drexel University

Rowe, David T. | Infectious Diseases & Microbiology | Associate Professor | PhD, McMaster University; MSc, University of Guelph

Ruppert, Kristine M. | Epidemiology | Assistant Professor | DrPH, University of Pittsburgh; MSN, Duquesne University

Sabik, Lindsay | Health Policy & Management | Associate Professor | PhD, Harvard University

Salk, Peter | Infectious Diseases & Microbiology | Visiting Professor | MD, Johns Hopkins University

Sekikawa, Akira | Epidemiology | Associate Professor | PhD, University of Pittsburgh; PhD, Yamagata University; MPH, University of Pittsburgh

Shaffer, John R. | Human Genetics | Assistant Professor | PhD, University of Pittsburgh

Silvestre, Anthony J. | Infectious Diseases & Microbiology | Professor | PhD, University of Pittsburgh; MA, Pennsylvania State University

Simkin-Silverman, Lauren R. | Epidemiology | Assistant Professor | PhD, University of Mississippi; MA, University of the Pacific

Songer, Thomas J. | Epidemiology | Assistant Professor | PhD, University of Pittsburgh; MSc, London School of Economics; MPH, University of Pittsburgh

Stall, Ronald | Behavioral & Community Health Sciences | Professor | PhD, University of California, San Francisco; MPH, University of California, Berkeley; MA, University of Kentucky

Stephan, Dietrich A. | Human Genetics | Professor | PhD, University of Pittsburgh

Stoyanovksy, Detcho A. | Environmental & Occupational Health | Research Associate Professor | PhD, Bulgarian Academy of Sciences; MS, Sofia University

Strotmeyer, Elsa | Epidemiology | Associate Professor | PhD, University of Pittsburgh; MPH, University of Pittsburgh

Talbott, Evelyn O. | Epidemiology | Professor | DrPH, University of Pittsburgh; MPH, University of Pittsburgh

Tang, Gong | Biostatistics | Associate Professor | PhD, University of Michigan; MA, Johns Hopkins University; MS, Beijing University

Terry, Martha A. | Behavioral & Community Health Sciences | Associate Professor PhD, University of Pittsburgh; MA, Northern Illinois University
Trauth, Jeanette | Behavioral & Community Health Sciences | Associate Professor | PhD, University of Pittsburgh; MS, Rensselaer Polytechnic Institute; MPA, University of Pittsburgh

Tseng, George C. | Biostatistics | Professor | ScD, Harvard University; MS, National Taiwan University

Tyurin, Vladimir A. | Environmental & Occupational Health | Research Assistant Professor | PhD, Moscow State University; MS, Far East State University

Tyurina, Yulia Y. | Environmental & Occupational Health | Research Professor | PhD, Russian Academy of Science; MS, St. Petersburg State University

Urban, Zsolt | Human Genetics | Associate Professor | PhD, Semmelweis University; MS, University of Szeged

Van Nostrand, Elizabeth | Health Policy & Management | Assistant Professor | JD, Tulane University

Van Panhuis, Wilbert | Epidemiology | Assistant Professor | PhD, Johns Hopkins University; MD, Free University Medical Center of Amsterdam

Wahed, Abdus S. | Biostatistics | Professor | PhD, North Carolina State University; MA, Ball State University; MS, University of Dhaka

Wang, Hong | Biostatistics | Research Assistant Professor | PhD, Medical College of Wisconsin; MS, Peking University

Weeks, Daniel E. | Human Genetics | Professor | PhD, University of California, Los Angeles; MS, University of California, Los Angeles

Weinstein, Andrea M. | Behavioral & Community Health Sciences | Assistant Professor | PhD, University of Pittsburgh; MS, University of Pittsburgh

Wisniewski, Stephen R. | Epidemiology | Professor | PhD, University of Pittsburgh; MAS, The Ohio State University

Yothers, Greg | Biostatistics | Research Associate Professor | PhD, University of Pittsburgh; MA, University of Pittsburgh

Youk, Ada O. | Biostatistics | Associate Professor | PhD, University of Pittsburgh; MA, University of Pittsburgh

Yuan, Jian-Min | Epidemiology | Professor | PhD, University of Southern California; MD, Shanghai Medical University; MPH, Shanghai Medical University

Zhang, Yuting | Health Policy & Management | Associate Professor | PhD, Harvard University; MS, Harvard University

Zmuda, Joseph M. | Epidemiology | Associate Professor | PhD, University of Pittsburgh; MPH, University of Pittsburgh; MS, University of Rhode Island
School of Social Work

The University of Pittsburgh's School of Social Work, successor to the Division of Social Work in the Department of Sociology of the University, was founded in September 1918, and accepted its first class of MSW students that year. The school shares with the University a commitment to the advancement and application of knowledge. Students in Pitt's School of Social Work learn the knowledge, skills, and values to engage in culturally competent practice with diverse populations and communities. They learn to critically analyze personal, familial, and environmental factors affecting practice settings and practice techniques, and to advocate for those who confront barriers to fulfilling their potential.

The school's students and faculty members also engage in scholarly activities that contribute to professional knowledge about complex social problems and innovative approaches to ameliorate those problems. In addition, school students, alumni, and personnel serve local, national, and international communities by developing and participating in collaborations with social agencies, community-based organizations, government, and foundations.

The mission of the School of Social Work is to advance knowledge and to apply that knowledge for the fulfillment of human potential through the prevention and amelioration of social problems. The school is committed to promoting the values of social and economic justice. Recognizing the complexities of contemporary society, the school dedicates itself through its educational, research, and public service activities to advocating for a society that respects the dignity and achievement of all individuals, families, and communities.

In furtherance of its mission, the School of Social Work strives to:

- Educate professional social workers with the knowledge, skills, and values needed to engage in culturally competent practice with diverse populations and communities; to critically analyze personal, familial, and environmental factors affecting practice settings and practice techniques; and to advocate for those who confront barriers to maximizing the achievement of their fullest potential.
- Engage in scholarly activities that contribute to professional knowledge about complex social problems and innovative approaches to ameliorate those problems.
- Provide service to local, national, and international communities through the development of and participation in collaborations with social agencies, community-based organizations, government, and foundations.

The school offers a full continuum of social work educational programs at the undergraduate, master's, and doctoral levels (as well as a continuing education program for practicing social workers). The school's bachelor's and master's programs in social work are accredited by the Council on Social Work Education, and graduates are eligible for full membership in the National Association of Social Workers.

Degree Options

The School of Social Work offers the Master of Social Work (MSW) and the Doctor of Philosophy (PhD) degrees. MSW students may combine their degree work with course work leading to a certificate. In addition, the School of Social Work has joint and cooperative degree options with other schools in the University as well as external institutions. The degree options include:

Master of Social Work

http://www.socialwork.pitt.edu/academics/master-social-work-msw

- Skill Concentrations (one is required)
- Direct Practice with Individuals, Families, and Groups
- Community, Organization, and Social Action (COSA)
- Direct Practice Certificate Programs
- Gerontology Certificate
- Home and School Visitor/School Social Worker Certificate
- Children Youth and Families Certificate
- Mental Health Certificate
- Integrated Healthcare Certificate
- Human Services Management Certificate
Doctor of Philosophy

http://www.socialwork.pitt.edu/academics/doctorate-social-work-phd

Joint and Cooperative Degrees

http://www.socialwork.pitt.edu/academics/msw/dualjoint-cooperative-degrees

- MSW
  - Master of Social Work/Master of Divinity
  - Master of Social Work/Master of Public Administration
  - Master of Social Work/Master of Public and International Affairs
  - Master of Social Work/Master of International Development
  - Master of Social Work/Doctor of Philosophy (PhD) in Social Work
  - Master of Social Work/Master of Public Health
  - Master of Social Work/Juris Doctorate
  - Master of Social Work/Certificate of Advanced Study in Teaching
  - Master of Social Work/Master of Business Administration
- PhD
  - Master of Social Work/Doctor of Philosophy (PhD) in Social Work
  - Master of Public Health/Doctor of Philosophy (PhD) in Social Work

Specific details regarding course requirements are described in this bulletin and on the School of Social Work Web site and in the Student Handbook.

Admissions

Admission to the MSW and PhD programs is for fall term (September) only. Applicants seeking full-time or part-time admission should submit the application far in advance of their expected entry into the program; all application materials are due no later than May 31 for the MSW program and December 31 for the PhD program of the year in which entry is expected. Applications are reviewed only upon receipt of all required materials. Application forms are available from:

School of Social Work
Office of Admissions
2104 Cathedral Of Learning
412-624-6302
E-mail: sswadmissions@pitt.edu
www.socialwork.pitt.edu/admissions/

Online applications are accepted via the MSW or PhD sections of our website located at http://www.socialwork.pitt.edu

For more specifics on admissions requirements for the MSW or the PhD, consult the description of the relevant degree program.

Admission of Students from Other Countries

The School of Social Work welcomes applications from students in other countries whose credentials meet the requirements and the standards of the School of Social Work and the Office of International Services of the University.

MSW and PhD applicants from other countries must apply directly to the School of Social Work. Applicants must submit the completed application form, additional required forms, and other required materials in English. Additional University of Pittsburgh application procedures for international students are described at http://www.socialwork.pitt.edu/admissions-aid/international-students. Other information and assistance for international students can be found online at www.ois.pitt.edu/intladmissions.html.
For MSW applicants only: International students who hold a baccalaureate degree in social work from a program that is not accredited by the Council on Social Work Education and who are interested in obtaining advanced standing credit must submit their transcript to the council for a determination of equivalency. Further Information can be found online at www.cswe.org.

Financial Assistance

Students interested in financial assistance to meet tuition and/or living costs should direct inquiries to both the Office of Admissions of the School of Social Work and the University's Office of Admissions and Financial Aid.

Students should be advised that limited resources often preclude any one funding source from granting awards that meet total financial needs. As a result, students are strongly encouraged to seek financial aid packages consisting of partial awards (including loans and scholarships) from a variety of sources, including the Office of Admissions and Financial Aid in Alumni Hall (412-624-PITT) and the School of Social Work Financial Aid Sources, Office of Admissions, Room 2104 Cathedral of Learning (412-624-6302; http://www.socialwork.pitt.edu/admissions-aid/financial-aid. See also the University-wide information on Financial Aid.

Applications for financial assistance are accepted only after an admissions decision has been made. Awards are made for a one-year period. New applications are required for each succeeding period.

Academic Standards

The School of Social Work's expectations for student and faculty conduct are described in school policies and embody the standards of professional social work. Students in the School of Social Work are required to adhere to the NASW Code of Ethics.

Academic Review Policy

The school maintains an academic review policy that applies to all degree students in the school and that seeks to ensure academic standards of achievement (i.e., satisfactory performance in the field, satisfactory grades for academic course work, and reasonable rates of progress toward completion of degree requirements). The policy statement on academic review appears in the Student Handbook.

Academic Integrity Policy

The school also has an academic integrity policy that applies to all students and faculty members in the school and seeks to ensure that students and faculty members respect the ethical standards expected of them in the performance of their duties and responsibilities. The policy statement on academic integrity appears in the School of Social Work Student Handbook.

Statute of Limitations for School of Social Work Degrees and Leaves of Absence

MSW Program

There is a four-year limitation on the earning of the MSW degree. The four-year period is counted from the date of entry into the program for four full academic calendar years. Under extenuating circumstances (listed below), an advisor can recommend an extension of time to the MSW program director and the associate dean for academic affairs. If approved, the period of extension and the conditions for completing the program will be recorded in the student's folder, with a copy sent to the student. Extenuating circumstances include the following:

- extended illness of the student,
- extended personal emergency,
- involuntary mobilization into a U.S. military unit,
death of a close family member. Under special conditions, MSW students may be granted one leave of absence. A maximum leave of one full academic year may be granted to master's students. A student wishing to take a leave of absence must submit in advance to the MSW program director a written request that indicates the length and rationale for the leave. The MSW program director and the associate dean for academic affairs will review the request. If approved, the time of the leave will not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

PhD Program

There is an eight-year statute of limitations for the completion of the PhD for students who enter with an MSW and who are not pursuing an MPH. There is a 10-year statute of limitations for students in the MSW/PhD program or the MPH/PhD program. Course work and the comprehensive examinations should be completed within three years and the dissertation within five. Under exceptional circumstances, a candidate for the PhD may apply for an extension of the statute of limitations. Requests for an extension of the statute of limitations must be submitted to the doctoral program director and must be approved by the doctoral committee and the dean. The request must be accompanied by a program assessment of the work required of the student to complete the degree and evidence of the extenuating circumstances leading to the requested extension. Students who request an extension of the statute of limitations must demonstrate proper preparation for the completion of all current degree requirements.

Under special conditions, doctoral students may be granted one leave of absence. A maximum leave of two academic calendar years may be granted to doctoral students. A student wishing to take a leave of absence must submit in advance to the doctoral program director a written request that indicates the length and rationale for the leave. The doctoral program director and the associate dean for academic affairs will review the request. If approved, the time of the leave will not count against the total time allowed for the degree being sought by the student. Readmission following an approved leave of absence is a formality.

NASW Code of Ethics

Professional ethics are at the core of social work. The profession has an obligation to articulate its basic values, ethical principles, and ethical standards. The NASW Code of Ethics sets forth these values, principles, and standards to guide social workers' conduct. The Code is relevant to all social workers and social work students, regardless of their professional functions, the settings in which they work, or the populations they serve. The NASW code of ethics can be viewed online at www.naswdc.org/pubs/code/default.asp.

Advising

Students are assigned a faculty advisor at the beginning of the student's matriculation into the MSW or PhD program. Students in the MSW program are assigned an advisor from among the faculty and professional staff. The assignment is made by the MSW program director and remains in effect until changed after a request by an advisor or advisee, as indicated by field assignment or program change, or due to a change in the advisor's assignment.

Special Academic Opportunities

The school offers several academic resources and programs for its students, as detailed below:

Student Participation on School Committees

Students have opportunities to participate in the governance of the School of Social Work by serving on school committees. Information about the purposes and functions of the committees is distributed during the beginning of each fall term. Through the Office of the Associate Dean for Admissions and Student Affairs, students can volunteer to serve on committees and become full members of those committees.

Student Executive Council (SEC)
All degree students in the School of Social Work comprise the membership of the student organization that elects the Student Executive Council. The council concerns itself with student life and serves as a liaison with the administration and faculty.

The Student Executive Council relies heavily on student participation and it endeavors to be of service to the student body. Activities include the publication of a student newsletter, the development of discussion sessions around critical social issues, the provision of opportunities for social action, the participation in planning for orientation, and the planning of a variety of social events.

In addition, SEC members, representing the student body, are appointed to serve in the following organizations and/or committees: Black Action Society; Student Chapter, NASW; Student Chapter, NABSW; Alumni Association (Liaison); BASW Club; and Graduate and Professional Student Association (GPSA).

The Student Executive Council is working to strengthen its involvement in diversity initiatives to benefit the student body. More information regarding the activities and goals regarding diversity initiatives will be published as they are created.

The Student Executive Council supports the MSW student body and welcomes any feedback from all students. The SEC Office is located in Room 2201B CL. Please reach us at our e-mail address at pitt.sec@gmail.com.

SEC’s website can be found at: http://www.socialwork.pitt.edu/student-resources/student-executive-council

Buhl Library

The Buhl Library of Social Work is a special collection of books, journals, and other resource materials specifically focused on social work. The Buhl Library is located on the first floor of Hillman Library and is staffed by a full-time social work librarian. Additionally, students at the School of Social Work have full access to the wide range of services provided by the University of Pittsburgh library system.

School of Social Work Faculty

Cynthia K. Bradley-King, Field Assistant Professor and Academic Coordinator, Child Welfare Education For Baccalaureates Program, PhD, Indiana University of Pennsylvania

Helen Cahalane, Academic Coordinator, Child Welfare Education for Leadership (CWEL); Clinical Assistant Professor, PhD, University of Pittsburgh

Keith Caldwell, Assistant Professor, Basw Program Director, MSW, University of Pittsburgh

Lynn Coghill, Assistant Professor, MSW Program Director, MSW, University of Pittsburgh

Valire Carr Copeland, Associate Dean for Academic Affairs, School of Social Work, Graduate School of Public Health, PhD, University of Pittsburgh

Larry Davis, Dean, School of Social Work; Donald M. Henderson Professor, PhD, University of Michigan

Shawn M. Eack, Associate Professor

Stephanie Eckstrom, Program Coordinator, Pitt-Bradford MSW Program, MSW, University of Maryland At Baltimore

Rafael J. Engel, Associate Professor, Associate Dean of Academic Affairs, PhD, University of Wisconsin

Rachel A. Fusco, Assistant Professor, PhD, University of Pennsylvania

Sara Goodkind, Assistant Professor, PhD, University of Michigan

Catherine Greeno, Associate Professor, Associate Dean of Research, Social Work, Department of Psychiatry, PhD, Stanford University

James Huguley, Assistant Professor
Lovie J. Jackson Foster
Leah Jacobs, Assistant Professor
Aaron R. Mann, Associate Professor, PhD, University of Pittsburgh
Beth Mulvaney
Christina Newhill, Professor, PhD, University of California at Berkeley
Marlo Perry
Laura Perry-Thompson, MSW Program Director, UPJ, MSW and MEd, University of Pittsburgh
Helen Petracchi, Associate Professor; Director, PhD, University of Wisconsin at Madison
Mary Elizabeth Rautkis, Research Assistant Professor, PhD, University of Pittsburgh
Daniel Rosen, Associate Professor, PhD, University of Michigan
Jeffrey Shook, Associate Professor, PhD, University of Michigan
Tracy Soska, Director, Continuing Education and Cosa Director, MSW, University of Pittsburgh
Fengyan Tang, Associate Professor, PhD, Washington University in St. Louis
John Wallace, Associate Professor, PhD, University of Michigan
Darren Whitfield, Assistant Professor
Liz Winter, Clinical Assistant Professor and Academic Coordinator, Child Welfare Education for Leadership, PhD, University of Pittsburgh
Hidenori Yamatani, Professor, PhD, University of Pittsburgh

Program and course Offerings

Master of Social Work Program

The leadership required from social work professionals demands an MSW practitioner who possesses a repertoire of specialized knowledge and skills and whose practice is informed by the values and ethics of the profession. Social workers in the 21st century confront a variety of new challenges, as well as many that have long existed. MSW practitioners, who work with and on behalf of individuals, families, groups, organizations, and communities, are faced with the need to develop innovative interventions in a rapidly changing practice environment. Such new, creative solutions to society's problems will be realized only if social work professionals have had a rigorous and thorough education. The goal of the MSW program is to prepare graduates with the specialized knowledge and skills needed to engage in empirically supported and culturally competent advanced social work practice—either direct practice with individuals, families, and small groups, or community organization and social administration—that reflects the social work profession's values, traditions, and philosophy. To accomplish this goal, the MSW program faculty have identified specific program objectives. Graduates of the MSW program will be able to:

- Demonstrate Ethical and Professional Behavior
- Engage Diversity and Difference in Practice
- Advance Human Rights and Social, Economic, and Environmental Justice
- Engage In Practice-informed Research and Research-informed Practice
- Engage in Policy Practice
- Engage with Individuals, Families, Groups, Organizations, and Communities
- Assess Individuals, Families, Groups, Organizations, and Communities
- Intervene with Individuals, Families, Groups, Organizations, and Communities
MSW Admissions

http://www.socialwork.pitt.edu

The following section details admissions information particular to applicants to the MSW program.

Persons seeking admission to the Master of Social Work (MSW) program must exhibit the leadership potential and professional capabilities essential to function effectively in the profession and must meet minimum academic requirements. An applicant must meet the following requirements:

- A bachelor's degree from an accredited college or university.
- It is recommended that all new applicants have a minimum of a B average (3.00 GPA on a 4.00 scale) in all undergraduate work. Applicants whose GPA is below 3.00 may be considered for admission under provisional status (see http://www.socialwork.pitt.edu/admissions/msw/admission-qualifications).
- It is recommended that all MSW applicants have a minimum of 60 undergraduate (or undergraduate plus graduate) credits in the liberal arts, of which 30 credits must be in the social and behavioral sciences and 30 credits must be distributed between the humanities and natural sciences. Course credits are counted from among the following:
  - The Humanities: English, fine arts, languages, literature, philosophy, religious studies, speech.
  - Social and Behavioral Sciences: anthropology, black studies, child development, economics, geography, history, legal studies, political science, psychology*, social
  - Natural Sciences: biology, computer science, mathematics, psychology*, statistics.
*Note: Psychology courses may be counted as either natural or social science credits.
- Successful completion of a course in descriptive statistics.

Academic and field education credits are not granted in the MSW program for life, volunteer, or employment experience.

Readmission

Persons who were once enrolled as degree students in the graduate program and who have voluntarily withdrawn from the program for more than one year must submit an application for readmission. The application process in these instances is the same as for new applicants. The statute of limitations may prevent the student from applying some graduate credits already completed as progress toward graduation.

Application and Admission Materials

Completed applications include the school online application form, transcripts, three letters of reference, a written statement, a resume, an agreement to participate in field education form and a $40 application fee. Applicants may request an interview, but this is not required. The director of admissions and student affairs may also request an interview.

Applications and other admissions information are available from:

Office of Admissions
School of Social Work
412-624-6302
E-mail: sswadmissions@pitt.edu
Online applications are accepted at:
http://www.socialwork.pitt.edu/admissions/msw/application-process

Application materials may also be downloaded from the School of Social Work Web site or applications may be completed directly online. These materials are available at www.socialwork.pitt.edu/admissions/.

Selection of Skill Concentration
Applicants are required to designate one skill concentration chosen from either Community, Organization, and Social Action (COSA) or Direct Practice with Individuals, Families, and Groups. The appropriateness of the concentration selection is evaluated on the basis of the applicant's resume and written statement. If the applicant is uncertain about which concentration to select, the matter should be discussed with the director of admissions before an application is submitted.

Students indicate in their application to the MSW program the skill concentration they intend to complete. To request a change to these concentrations after beginning the MSW program, students must show that the change would contribute directly to their educational goals and career plans. Students also must be able to demonstrate in a projected plan of study that they will be able to complete all classes and field requirements in the new skill concentration within four years of their date of entry into the MSW program, as specified by the Council on Social Work Education. Such requests should be made and finalized during registration for the second semester of matriculation for full-time students and the third semester of matriculation for part-time students.

Admissions Interview

Admissions interviews may be initiated by the admissions officer of the school in some special circumstance. Decisions on applications for admission are usually made without such an interview. All applicants are welcome to seek information-sharing interviews.

Financial Assistance for MSW Students

The University of Pittsburgh School of Social Work recognizes that financing graduate education is extremely important, especially because the cost of higher education continues to increase each year. Please note that it is the University's Financial Aid Office that administers the process of awarding loans to graduate students. The School of Social Work awards scholarships and a limited number of training fellowships to its master's level students and scholarship and assistantships to its PhD students.

Financial aid is not awarded to any student until admission to the School has been granted. Early application for merit-based scholarship aid is strongly encouraged.

Students applying for financial aid must complete the Free Application for Federal Student Aid (FAFSA) form. Pitt's federal school code is 008815. The FAFSA form is not available until January for those applying for the next academic year.

MSW Degree Requirements

The MSW curriculum is designed to be a two-year, full-time program. The MSW degree requires the satisfactory completion of a minimum of 60 credits—42 in class work and 18 in field practica—with a minimum GPA of 3.00. Although MSW students must take their required courses for a letter grade, elective courses offered and taken in the graduate program of the School of Social Work may be taken for a letter grade or an H/S/U grade. All graduate field instruction courses shall be taken for S/NC grades. No student will be permitted to graduate with a C, F, or U grade in a required course or an NC grade in the field practicum. Specific requirements for each of the skill concentrations are detailed in the student handbook and on the school's Web page, http://www.socialwork.pitt.edu/academics/policies-handbooks.

MSW Academic Standards: Probation

A student in the MSW program will be placed on academic probation if:

- after completing at least nine (9) quality point credits, the student's cumulative GPA falls below 3.00;
- the student receives a grade lower than a B- in a required course (including the five foundation courses, the required concentration skill courses, the second-level human behavior, policy, and research courses, and any specific courses needed to fulfill specialization or certificate requirements), or
- the student receives an NC grade for field placement (SWGEN 2099, SWINT 2099, or SWCOSA 2099).

The MSW program director will send a letter to the student and the student's advisor notifying them of the student's placement on academic probation. The letter will advise the student and the student's advisor of the date and location of an academic review meeting, to be convened by the MSW program director, to discuss the terms of the student's academic probation. A copy of this letter will be placed in the student's folder. Depending on the outcome of the meeting, a student placed on academic probation may be required to modify the student's course of study in the MSW program, including changing the academic courses for which the student is registered and/or delaying entry into or suspending field placement.
Part-Time MSW Students

Students pursuing a part-time course of study must complete the MSW degree in four academic years. Part-time students are expected to take their foundation courses (the equivalent of the first fall term for full-time students) on a part-time basis during the first year and then begin concentration courses and field instruction, on either a part-time or a full-time basis. Part-time students who have completed 21 credits of course work must begin their first field placement; enrollment in further courses after 21 credits is contingent on the initiation of the field placement. Part-time students doing field instruction must complete a minimum of 12 clock hours each week, with at least eight of those hours done during the regular work day of the agency. In order to earn their MSW degree in four years, all part-time students must recognize that they will need to enroll for a minimum of two courses per term in each of the three terms during the academic year. The following options are acceptable:

- Two courses (3 credits per course) or
- One course (3 credits) plus a minimum of 3 field credits or
- A minimum of 6 field credits (equivalent to two courses)

Advanced Standing and Exemptions for MSW Course Work

Students entering the MSW program may be granted advanced standing, receive transfer credit, or be exempt from specific course requirements if their coursework was completed within the past 7 years. The definition for each is:

**Advanced Standing** is defined as the awarding of academic credit toward a degree by the School of Social Work for prior baccalaureate course or field work completed at an undergraduate social work program accredited by the Council on Social Work Education when such work is evaluated as entirely comparable. A maximum of 12 course credits and 6 field work credits may be considered.

**Transfer Credit** is defined as the awarding of academic credit toward a degree by the School of Social Work for post-baccalaureate course or field work completed at an accredited academic institution when such work is evaluated as entirely comparable.

**Exemption** is defined as the waiving of a required academic course by the School of Social Work following an evaluation of the student's previous course work that is determined to be essentially identical to the required course being waived. Such an exemption does not, however, reduce the number of credits required for graduation.

Specific details and limitations regarding this policy and related procedures are described in the Student Handbook and on the School of Social Work Web site, http://www.socialwork.pitt.edu/academics/policies-handbooks.

Consistent with the Council on Social Work Education's (CSWE's) Educational Policies and Accreditation Standards, the School of Social Work's MSW program does not grant advanced standing, transfer credit, or exemption for prior life, volunteer, or employment experience.

Organization of the MSW Curriculum

The MSW program entails both class and field requirements distributed across foundation and skills concentration curricula. The MSW foundation curriculum is the same for all MSW degree students. All students must complete the school's designated class and field requirements for one of two skills concentrations: Community, Organization, and Social Action (COSA) or Direct Practice with Individuals, Families, and Groups. Students must complete the MSW Foundations requirements before being permitted to take concentration courses.

A change in concentration after matriculation is not advisable. (See Selection of Skill Concentration for further details on changing concentrations.)

Social Work, MSW/MBA

The MBA/Master of Social Work joint degree program is designed to provide students with a unique combination of social work knowledge and skills, with exceptional strength in management decision-making and leadership. The degree is offered jointly through the University of Pittsburgh School of Social Work and the Joseph M. Katz Graduate School of Business.

Faced with an increasingly competitive market, nonprofit organizations are beginning to emulate management methods and paradigms being practiced by for-profit companies, such as financial operations, human resource and data management, market and economic analysis, and evidence-based strategic planning. As philanthropic organizations become more concerned about their accountability and utility of financial supports provided
to various human service organizations, they are beginning to evaluate nonprofits beyond program outcomes or average cost per client to more advanced assessments, such as cost-efficiency and effectiveness and cost-benefit ratio. Unfortunately, such analytic methodologies are rarely offered to social work students by the traditional social work curriculum.

Initially, the proposed MSW/MBA dual-degree program will be open to the SSW's Community Organization and Social Action (COSA) students. Upon successful execution of this initiative, the school plans to open the program to all MSW full-time students (COSA and Direct Practice students).

Students who want to earn a dual-degree must gain acceptance into both graduate degree programs by applying separately to each school. The joint-degree program applicants will also be required to submit their Graduate Management Admission Test (GMAT) or Graduate Records Exam (GRE) examination scores to both schools. Specific questions may be addressed to:

Dr. Hide Yamatani, Ph.D., MSW, MBA
School of Social Work
University of Pittsburgh
2117 Cathedral of Learning
Pittsburgh, PA 15260
Email address: hzy@pitt.edu

Requests for further information concerning the Katz Graduate School of Business, see http://www.business.pitt.edu/katz/. Specific questions may be addressed to:

Dr. Rabikar Chatterjee, Ph.D.
Associate Dean
Katz Graduate School of Business
University of Pittsburgh
301 Mervis Hall
Pittsburgh, PA 15260
Email address: rabikar@katz.pitt.edu

MSW/MBA Joint Degree Admissions Criteria

☐ SSW Requirement
☐ A Baccalureate degree that must be completed prior to the program start date. Applications must include transcripts of coursework completed at the time of submission of the application. Admission will be contingent upon submission of an official, final transcript of the completed Bachelors program before the start of the MSW program.
☐ Undergraduate students with social work and human service backgrounds are preferred.
☐ In general, we would expect an undergraduate GPA of 3.0 or better for admission.
☐ International students must submit originals or certified copies of transcripts/mark sheets and degree/diploma certificate in the original language plus a certified English translation (if the original is not in English).
☐ Paid work experience is preferred but not required.
☐ GMAT/GRE scores are not required for regular MSW students applicants but for the joint degree applicants in MSW and MBA must have their official Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) score reports forwarded directly to the University of Pittsburgh, Katz Graduate School of Business (KGSB), by the admission deadline.
☐ Applicants will submit a 3-5 page double spaced typed personal statement describing their post-graduate career goals, skills in which they excel, and key accomplishments.
☐ Applicants will submit three recommendations from persons who have known the applicant in academic or professional capacities. At least one from a faculty member is preferred. (Recommendations from friends and family will not be accepted.)
☐ Applicants will submit their current resume.
☐ English Proficiency Exams (for international applicants who are citizens of countries where the official language is not English)-- the Test of English as a Foreign Language (TOEFL) with minimum acceptable score: Internet-based test: 100; paper-based test: 600.
☐ Non-refundable application fee is $40.
☐ Prospective candidates, domestic or international, may be interviewed before admission, in person or by telephone.
☐ Submission of online MSW application form by the admissions deadline data of May 31.
☐ Katz GSB Requirement
A Baccalaureate degree that must be completed prior to the program start date. Applications must include transcripts of coursework completed at the time of submission of the application. Admission will be contingent upon submission of an official, final transcript of the completed Bachelors program before the start of the MBA program.

Undergraduate students with strong analytical backgrounds are preferred. In general, we would expect an undergraduate GPA of 3.0 or better for admission.

International students must submit originals or certified copies of transcripts/mark sheets and degree/diploma certificate in the original language plus a certified English translation (if the original is not in English).

Work experience is not necessary, though highly desirable.

GMAT/GRE scores: Applicants must have their official Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) score reports forwarded directly to the University of Pittsburgh, Katz Graduate School of Business, by the admission deadline. In general, we would expect a GMAT score of 600 or higher for admission. (Corresponding GRE scores will be equivalent to these levels, after conversion.).

Applicants will submit a 250 word essay describing their post-graduate career goals, skills in which they excel, and key accomplishments.

Applicants will submit two recommendations from persons who have known the applicant in academic or professional capacities. At least one from a faculty member is preferred. (Recommendations from friends and family will not be accepted.)

Applicants will submit their current resume.

English Proficiency Exams (for international applicants who are citizens of countries where the official language is not English): Either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing Systems (IELTS) is required.

TOEFL Minimum acceptable score: Internet-based test: 100; paper-based test: 600.

IELTS Minimum acceptable score: 7.0

$50 non-refundable application fee.

Prospective candidates, domestic or international, may be interviewed before admission, in person or by Skype.

Learning outcome goals

The MSW/MBA dual-degree program is designed to provide students with a unique combination of social work knowledge and skills, with exceptional strength in management decision-making and leadership. In addition to the MSW learning outcomes that are already in place, supplementary MSW/MBA objectives include:

- Proficiency in the management functions of accounting, finance, computer information systems, marketing, operations management, organizational behavior, human resource management, and social enterprise.
- Special emphasis on development of skills and abilities to lead strategically and to position an organization effectively for continued growth and development in both for-profit and nonprofit sectors.
- Knowledge and understanding of complex organizations, their development and transformation, administrative principles, the decision-making process, and competence in managerial functions.
- To provide applied learning experiences, the required field practicum will include professional supervision through appropriate concentration settings that will focus on community and human service organization management.

Program requirements

- A graduate-level course grade of B or higher must be maintained throughout the joint-degree program.
- The MBA program requires 51 credits for the part-time or one-year program, of which at least 34 credits must be from KGSB courses, while the balance maximum of 17 credits may be from other graduate programs.

Core Courses

The following MBA "core" courses (total of 22.5 credits) are required:

- BACC 2401 - FINANCIAL ACCOUNTING
- BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS
- BQOM 2401 - STATISTICAL ANALYSIS: UNCERT
- BFIN 2409 - FINANCIAL MANAGEMENT 1
- BMKT 2409 - MARKETING MANAGEMENT
- BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS
- BQOM 2421 - DECISION TECHN IN MFG & OPER MGT
Program requirements

- All MSW/MBA joint degree students will be required to take at least 34.5 credits of KGSB credits, consisting of the above 22.5 credits of core courses plus an additional 12 credits of KGSB electives. Thus, up to 16.5 credits will be accepted from courses successfully completed in the MSW program to achieve the total of 51 credits required for the completion of the Katz MBA degree.
- All MSW/MBA joint degree students will be required to take a course entitled Social Entrepreneurship (1.5 credits) from the KGSB.
- The following KGSB courses will count as credits towards the MSW degree:
  - BACC 2401 - FINANCIAL ACCOUNTING (3 credits) will qualify as equivalent to SWCOSA 2085 - FINCL MGT HUMAN SERVICE INSTITNS (3 credits), and will count as 3 credits for both the MSW and MBA programs,
  - BOAH 2409 - ORGANIZATIONAL BEHAVIOR: LEADERSHIP AND GROUP EFFECTIVENESS (1.5 credits) and Strategic Management (1.5 credits) will qualify as equivalent to SWRES Organizational Research, and will count as 3 credits for both the MSW and MBA programs (SA track only),
  - SW General Elective 1-One 3-credit or two 1.5-credit required MBA courses (e.g., BECN 2401 - ECONOMIC ANALYSIS FOR MANAGERIAL DECISION: FIRMS AND MARKETS, 3 credits), which will count as 3 credits for both the MSW and MBA programs, and
  - SW General Elective 2- One 3-credit or two 1.5-credit required MBA courses (e.g., BIND 2444 - MANAGEMENT SIMULATION CAPSTONE, 3 credits), which will count as 3 credits for both the MSW and MBA programs.
- Thus, the double-counted credits make it possible for students to earn both degrees without having to take the total sum of credits required for completing the two degree programs separately.

- It should be noted that a long-standing educational policy of the SSW is that students who, within the past seven academic calendar years, have received a social work degree from a CSWE-accredited undergraduate program are eligible for advanced standing. Those granted advanced standing during the admission process can receive up to 12 academic credits and six field education credits that will count towards completion of the MSW program.
- Thus, full-time COSA students with advanced standing must earn grand total of 64.5 credits for CO students, and 61.5 credits for SA students (adding all MSW and MBA courses). This means total of 30 social work credits (including total of 12 field credits) to be taken by CO students and 27 credits (including total of 12 field credits) to be taken by SA students. Additionally, they must take minimum of 34.5 credits of MBA courses, which includes 22.5 and 12 credits of required and electives, respectively.
- Full-time COSA students without advanced standing must earn grand total of 85.5 credits for CO students, and 82.5 credits for SA students (adding all MSW and MBA courses). This means total of 51 social work credits to be taken by CO students and 48 credits to be taken by SA students. Additionally, they must take minimum of 34.5 credits of MBA courses, which includes 22.5 and 12 credits of required and electives, respectively.

Social Work - Community, Organization, and Social Action Concentration, Community Organization Track, MSW

Community, Organization, and Social Action (COSA) Concentration Curriculum Requirements

COSA offers concentration courses in Human Behavior and the Urban Environment, Organizational Policy Analysis, and a social work research course related to either of the two COSA specialization tracks from which students may choose: Community Organization or Social Administration. Students must take one of the required specialization core skill courses; however, many students prefer to pursue both COSA specializations. Students fulfill their remaining credits from a range of COSA skill elective courses, which include such topics as Supervision and Personnel Management, Financial Management, Public Relations/Marketing, Issue-Based Organizing, Community and Economic Development, and Grants, Proposals and Social Work, Social Work and the Law, and Race and Social Problems. Students may also pursue elective courses in other related professional schools. All students must complete six credits of foundation field work followed by twelve credits of concentration field placement in a range of organizational settings across an array of social work issues and program areas.

Required Skill Courses
Second-Level HBSE Course

- SWBEH 2008 - HUMN BHVR: URBAN ENVIRONMENT

Second-Level Research Course

Select one of the two courses below based on your specialized track (CO or SA)

- SWRES 2009 - ORGANIZATIONAL AND COMMUNITY DEVELOPMENT RESEARCH (SA)
- SWRES 2023 - DIRECTED STUDY IN RESEARCH (CO)

Electives and Field Placement

- COSA Skill Electives - 6 credits (two courses related to CO or SA track - see below)
- General Electives - 6 credits
- SWCOSA 2099 - FIELD WORK - 12 credits (related to CO or SA track)

Community Organizing Electives

- SWCOSA 2090 - WORKING WITH GROUP AND INTERGROUP RELATIONS: FACILITATION/NEGOTIATION/MEDIATION **
- SWCOSA 2092 - ORGANIZING FOR COMMUNITY CHANGE: ISSUE, LABOR AND POLITICAL ORGANIZING
- SWCOSA 2096 - COMMUNITY PLANNING AND DEVELOPMENT

Note:

*Courses required for Human Services Management Certificate (COSA or DP)

** Courses can count for either Social Administration or Community Organizing

Social Work - Community, Organization, and Social Action Concentration, MSW

Foundation Requirements

All MSW students must complete the MSW Foundation requirements listed below before being permitted to take concentration skill courses; second-level human behavior and the social environment, social welfare, or research courses; skill electives; and concentration field practicum, unless they are exempted via Advanced Standing credit or examination or an academic plan that is approved by the advisor and the program director.

The foundation course requirements (15 credits total) are:

- SWRES 2021 - GENERALIST SOCIAL WORK RESEARCH
Note:
In addition to the five courses listed above, students must complete 6 credits of Foundation Field Work. Students entering with advanced standing may be exempted from part or all of the Foundation Field Work requirement.

Skill Concentration Curricula

Upon completion of the foundation requirements, students begin course work in either of the two skill concentrations: Direct Practice with Individuals, Families, and Groups or Community, Organization, and Social Action (COSA). In each skill concentration, students can opt to choose a University of Pittsburgh certificate program, or a School of Social Work certificate program.

Community, Organization, and Social Action

The Community Organization and Social Action (COSA) concentration prepares socially active and civically engaged students for leadership careers in community service, community change, and community development organizations. Students can pursue specialized course work along one of two tracks - community organization or social administration - but many prefer to combine studies in both specialization areas. Many courses incorporate service learning and applied research that draw on field internships to enhance learning experience and build a professional portfolio. The COSA concentration also provides opportunities for networking with other students through a COSA student group and with faculty, field faculty, alumni, and seasoned community leaders from the greater Pittsburgh region, both in the field and at the school. Information about curriculum requirements is available on the school's Web site, http://www.socialwork.pitt.edu/academics/msw/concentrations/cosa

MSW students in the COSA concentration can elect as part of their graduate studies to obtain a certificate in human service management.

Information about the human services certificate program is available on the school's Web site, http://www.socialwork.pitt.edu/academics/msw/concentrations/direct-practice/certificates/human-services-management

Electives:

MSW Courses

Social Work - Community, Organization, and Social Action Concentration,
Social Administration Track, MSW

Community, Organization, and Social Action (COSA) Concentration Curriculum Requirements

COSA offers concentration courses in Human Behavior and the Urban Environment, Organizational Policy Analysis, and a social work research course related to either of the two COSA specialization tracks from which students may choose: Community Organization or Social Administration. Students must take one of the required specialization core skill courses; however, many students prefer to pursue both COSA specializations. Students fulfill their remaining credits from a range of COSA skill elective courses, which include such topics as Supervision and Personnel Management, Financial Management, Public Relations/Marketing, Issue-Based Organizing, Community and Economic Development, and Grants, Proposals and Social Work, Social Work and the Law, and Race and Social Problems. Students may also pursue elective courses in other related professional schools. All students must complete six credits of foundation field work followed by twelve credits of concentration field placement in a range of organizational settings across an array of social work issues and program areas.

Required Skill Courses
SWCOSA 2084 - INTRODUCTION TO SOCIAL ADMINISTRATION
SWCOSA 2088 - COMMUNITY ORGANIZING AND PLANNING

Second-Level HBSE Course

SWBEH 2008 - HUMN BHVR: URBAN ENVIRONMENT

Second-Level HBSE Course

SWWEL 2087 - ORGANIZATIONS AND PUBLIC POLICY

Second-Level Research Course

Select one of the two courses below based on your specialized track (CO or SA)

SWRES 2009 - ORGANIZATIONAL AND COMMUNITY DEVELOPMENT RESEARCH (SA)
SWRES 2023 - DIRECTED STUDY IN RESEARCH (CO)

Electives and Field Placement

- COSA Skill Electives - 6 credits (two courses related to CO or SA track - see below)
- General Electives - 6 credits
- SWCOSA 2099 - FIELD WORK - 12 credits (related to CO or SA track)

Social Administration Electives

- SWCOSA 2040 - GRANT PROPOSAL WRITING */**
- SWCOSA 2053 - COMMUNICATIONS AND PUBLIC RELATIONS
- SWCOSA 2054 - LEADERSHIP ** (cross-listing with GSPIA)

Note:

*Courses required for Human Services Management Certificate (COSA or DP)

** Courses can count for either Social Administration or Community Organizing

Social Work - Direct Practice with Individuals, Families, and Groups Concentration, MSW

Foundation Requirements

All MSW students must complete the MSW Foundation requirements listed below before being permitted to take concentration skill courses; second-level human behavior and the social environment, social welfare, or research courses; skill electives; and concentration field practicum, unless they are exempted via Advanced Standing credit or examination or an academic plan that is approved by the advisor and the program director.

The foundation course requirements (15 credits total) are:

- SWRES 2021 - GENERALIST SOCIAL WORK RESEARCH
Note:

In addition to the five courses listed above, students must complete 6 credits of Foundation Field Work. Students entering with advanced standing may be exempted from part or all of the Foundation Field Work requirement.

Skill Concentration Curricula

Upon completion of the foundation requirements, students begin course work in either of the two skill concentrations: Direct Practice with Individuals, Families, and Groups or Community, Organization, and Social Action (COSA). In each skill concentration, students can opt to choose a University of Pittsburgh certificate program, or a School of Social Work certificate program.

Direct Practice with Individuals, Families, and Groups

Direct practice skills form the basis of service in family and children's agencies, mental health and mental retardation programs, health services, work with juvenile delinquents and adult offenders, and substance abuse treatment. Through course work and field practicum, students in the direct practice concentration acquire the knowledge and skills needed to engage in direct practice with diverse populations of individuals, families, and small groups. Practice approaches include psychodynamic-psychosocial, cognitive-behavioral, and social systems. Consistent with an emphasis on client strengths and the values and traditions of the social work profession, students become skilled at mobilizing a variety of formal and informal support systems to assist clients in addressing their needs and realizing their potential.

Direct practice certificates entail a specific array of courses and field placement experiences that permit students to tailor their education and professional preparation.

Six certification programs are available to direct practice students. Direct practice students in the MSW program can elect to pursue a certificate in:

- Children, Youth and Families Certification (School of Social Work Certificate)
- Gerontology (University of Pittsburgh Certificate)
- Home and School Visitor (School of Social Work, School of Education, and PA Department of Education Certificate)
- Integrated Health Certificate (University of Pittsburgh Certificate)
- Mental Health Certification (School of Social Work Certificate)

Students are not required to pursue a certificate. Those who choose to do so, must declare their choice of a certificate program no later than the end of the first term of full-time study. Individuals intending to complete the Home and School Visitor certificate must declare their interest in their application for admission to the MSW program. Information about curriculum requirements, specialization, and certificate programs are available on the school's Web site, http://www.socialwork.pitt.edu/academics/msw/concentrations/direct-practice

Electives:

MSW Courses

Social Work, MSW

MSW Degree Requirements

The Master of Social Work (MSW) degree can be completed in two academic calendar years of full-time study and requires the satisfactory completion of a minimum of 60 credits-42 class and 18 field practicum. Candidates for the MSW degree must demonstrate successful completion of the required foundation courses, concentration-specific courses, and field practicum, and must have a minimum overall GPA of 3.00.
Children, Youth and Families Certificate

The Children Youth and Families Certificate is designed to prepare graduates of the MSW program to provide services to at-risk children and families through a wide range of public and private agencies. Through specialized coursework and internship opportunities, students are prepared for professional practice in settings such as family service agencies, child protection, the courts, early intervention, community-based treatment, and other child and family-focused programs. The Children, Youth and Families Certificate is awarded by the School of Social Work, and provides students with the opportunity to enhance professional competency in providing services to young persons and their families.

Gerontology Certificate

The Certificate Program in Aging has been in place since 1980 and continues to attract numerous MSW students. The goals of the Gerontology Certificate program are to enhance students' understanding of the aging process and to provide them with the skills relevant to practice with and/or on behalf of the elderly and their family members. Knowing how to work with the elderly as a social work professional offers many opportunities in an era when that segment of the population continues to increase steeply.

Through courses and the field placement experience, Gerontology Certificate students are exposed to the various roles and settings that constitute contemporary social work practice in aging. Emphasis is given to understanding client and family strengths; diversity among the aged population; the social, cultural, community, and policy contexts of aging; and how these factors inform, and may be influences by, social work practice. Gerontology Certificate students are encouraged to apply to the Hartford Program Partnership in Aging Education Fellowship.

Home and School Visitor Certificate

Since the 1930s, the School of Social Work has offered a Home and School Visitor/School Social Worker certificate. The program was started by pioneering social work practitioner and educator Marion Hathway. The H&SV/SSW is an interprofessional Educational Specialist certificate program, operated jointly with the University of Pittsburgh School of Education and the Pennsylvania Department of Education, and is intended for students who plan to deliver social work services in elementary or secondary schools. There are three models for certification:

- Certification earned while earning the MSW
- Certification earned post-MSW
- Certification earned without an MSW

The H&SV/SSW certificate program is designed to enhance professional competency in the development and delivery of high quality social work services to diverse student populations in both public and private elementary and secondary schools. The certificate program is organized around the Direct Practice concentration and offers students the opportunity to gain advanced knowledge and skills via courses taken in the Schools of Social Work and Education and a field placement in an educational setting.

For further information, please contact Deborah Robinson, MSW, LSW, Director, dcr16@pitt.edu.

Home and School Visitor/School Social Worker Certificate

The Home and School Visitor/School Social Worker (H&SV/SSW) certificate, a joint effort with the University of Pittsburgh School of Education that is accredited by the Pennsylvania Department of Education, prepares students for professional practice in both public and private educational settings throughout Pennsylvania. The H&SV/SSW certificate program is designed to enhance professional competency in the development and delivery of high-quality social work services to diverse student populations in elementary and secondary schools.

Human Services Management Certificate

Many MSW's often find themselves moving up quickly into supervisor, management, and even executive positions. The generalist perspective and systems knowledge from their social work education provides a strong basis for leadership growth in a range of social work settings. However, to better prepare macro practice/COSA students to take advantage of leadership opportunities and enhance their personal and professional development,
the School now offers the Human Services Management Certificate in collaboration with the Network of Social Work Management under a new University partnership initiative.

This national Human Services Management Certificate can be completed by COSA students in the course of their MSW studies. Students pursuing this certification option must complete twelve credits through the following COSA core and skill electives course work covering Network of Social Work Management (NSWM) competency and practice behaviors in the areas of:

- Social Administration/Human Services Management
- Community Organizing (Community Collaboration)
- Human Resources & Financial Management with Supervision
- Grants, Proposals, and Funding Development

COSA students are encouraged to take other skill electives in COSA, as well as skills courses in other schools. For more information on the NSWM competencies: https://socialworkmanager.org/competencies

In addition, COSA student in Social Administration/Human Service Management must also complete a COSA concentration field placement (12 credits) in a community-based or human services organization to apply their course knowledge, values, and skills in the organizational setting.

For more information on the Human Services Management Certificate, please contact the Community Organization, and Social Action Concentration Chair, Tracy M. Soska, at 412-624-3711 or tsssw@pitt.edu.

### Integrated Healthcare Certificate

The Integrated Healthcare Certificate Program prepares graduate social work students specializing in direct practice with the knowledge and skills necessary to work with individuals, families, groups, and communities in a variety of institutional and community-based health-related settings. With a focus on leadership and advocacy, the goal of the certificate program is to increase the number of students focused on health and social work. Master's level social work training (MSW), along with a Certificate in Integrated Healthcare, provides the knowledge and skills to work in a variety of integrated healthcare settings. Students completing the Integrated Healthcare Certificate Program will have a deeper understanding of the relationship between behavioral health (e.g., mental health, substance use) and physical health. New opportunities abound in health care for social workers trained in an interdisciplinary approach who are prepared to bridge the gap between health care providers and patient needs within a coordinated system of care.

Students interested in integrated healthcare may also apply for the Edith Baker Behavioral Healthcare Fellowship, a competitive program that will provide successful applicants with stipends of $10,000 during their concentration field placement.

For more information regarding this fellowship, please e-mail BHWET@pitt.edu.

### Mental Health Certificate

The Certificate in Mental Health is designed to prepare MSW graduates for professional practice with individuals, families, and/or groups with mental and/or behavioral health challenges through a wide range of social and human service agencies. Students in the MSW Program take a series of required and elective courses leading to the Certificate in Mental Health within the normal MSW requirements and need not exceed the length of the degree program. Direct practice social workers in mental health services have a wide array of career opportunities across a range of public and private settings, including psychiatric inpatient services, outpatient psychotherapy services, child and family services, partial hospitalization and case management services, drug and alcohol services, and private practice.

### Doctorate in Social Work Program

Social work doctoral education prepares people for leadership roles in social work research, social work education, social policy and planning, and administration. The goal of the doctoral program of the School of Social Work is to provide students with advanced research and policy analysis skills based on a foundation of social science theory and social welfare. The doctoral program is committed to the school's mission to address human worth and dignity, social justice, and social equity for diverse populations. Program graduates will be able to conduct research that addresses social work and social welfare and policy problems and to disseminate knowledge to researchers, social work educators, social work practitioners, and policy makers.
The University of Pittsburgh has one of the oldest social work doctoral programs in the United States, awarding its first DSW degrees in 1949. In 1963, the program's degree was changed to a PhD. Information regarding the Doctor of Philosophy Program is available online at www.socialwork.pitt.edu/academic-programs/phd/.

In addition to the description of the PhD in Social Work given below, doctoral students should consult the Regulations Pertaining to Doctoral Degrees in the General Academic Regulations section of this document.

Admission to Doctoral Program

http://www.socialwork.pitt.edu/admissions-aid

Contact Information

Ms. Jessalynn Oliver  
Office of Admissions  
School of Social Work  
Room 2104 Cathedral of Learning  
412-624-6302  
E-mail: j.oliver@pitt.edu  
www.socialwork.pitt.edu

Applications should be received no later than December 31 of each year. Admission to the program is on a full-time basis for the Fall Term only. The doctoral program is strongly committed to a policy of equal educational opportunity for people of all races, creeds, and ethnic origins.

Program Transfer Credits

Students who have earned doctoral-level credits at the University of Pittsburgh or at another accredited institution within seven years preceding entry to the doctoral program may be eligible for advanced standing. Advanced standing consists of awarding academic credit toward the degree for post-master's work completed when such work is evaluated as entirely comparable. Official transcripts certifying graduate course work completed in a degree-granting graduate program should be submitted at the time of application. The maximum number of credits that can be transferred and accepted for advanced standing is 12.

See Allowable Credits in the General Academic Regulations section of this bulletin for more details on requirements for transfer credits.

Financial Support for Doctoral Students

Financial Support for Doctoral Students Doctoral students are supported in years one and two by research-based graduate student assistantships (GSAs), and in years three and four by teaching assistantships (TAs). Exceptional students with teaching experience and two years post-MSW experience may apply for our teaching fellowships (TFs). Both GSAs and TAs/TFs provide tuition remission and stipends for the fall, spring, and summer terms. There is a 20-hour-per-week work requirement.

Typically the student receives their GSA or TA support for four years as long as the student is making satisfactory progress toward the degree. If a fifth year is required, it usually is supported by adjunct teaching. Students also are encouraged to apply for predoctoral research traineeships and other awards.

Doctoral Curriculum Objectives

The program curriculum strongly emphasizes social problem areas, as well as coordinating themes in theory, research methodology, and social policy courses. The overall goal is to integrate the acquisition of basic advanced knowledge, methods of empirical testing, and application to real-world
situations. Course materials draw heavily on several priority areas of social work concern, including aging, mental health, income maintenance, child welfare, women's issues, child and family policy, and health services, and social justice, diversity issues.

By the time students have completed the program, they should have acquired the following:

- Knowledge of relevant social science theory
- Advanced skills in research methodology and statistics
- Advanced knowledge of social welfare policy (historical and contemporary) and policy analysis
- Knowledge of relevant fields of practice, theoretical and policy perspectives, and research findings
- Exposure to an interdisciplinary frame of reference through mechanisms provided internally by the doctoral program and externally through access to other disciplines and professions in the wider University

Although entering students are not required to have completed course work or other experience relevant to computer literacy, possessing basic computer skills will be an asset to students beginning the program.

Social Work, PhD

PhD Degree Requirements

The PhD program requires 10 core courses, one policy elective, plus a minimum of five electives, which may be 2-, 3- or 4-credit courses. During their first year, all students are required to take the Doctoral Seminar (0 credits). Students will spend two years meeting their course requirements. Full-time status is defined as nine or more credit hours per semester. Fifty (50) credit hours must be completed before students are permitted to take the comprehensive examination.

Doctoral Requirements

During the first two academic years in the program, full-time students are primarily involved in taking the required courses in the four essential areas of study: social welfare, social science theory, research methods, and social policy. Students take courses in the fall and spring terms of their first and second years; summer courses are necessary if a student is enrolled in one of our joint degree programs or desires a nine-credit schedule for the fall and spring terms.

Curriculum

Courses are taken in the fall and spring terms during the student's first and second years; summer courses are needed if a student desires a nine-credit schedule for fall and spring terms and/or is enrolled in one of the joint degree programs (no more than 12 credits are recommended for the student's first semester in the program). Learn more about our curriculum.

Comprehensive Examination

Students take a comprehensive examination after completion of all required and elective courses. The Comprehensive examination is taken in the summer of the second year. For students in the MSW/PhD program, the comprehensive examination is taken in the summer of the 3rd year.

Doctoral Dissertation

The doctoral dissertation involves:

- Dissertation Research: begins after passing the comprehensive examination
- Defense of a Dissertation Overview: occurs after a committee review of the dissertation overview and includes an introduction to the problem, a literature review, and a detailed methodology (admission to PhD candidacy)
- Final Dissertation Defense: occurs at least one year following admission to candidacy
Grades in Course Work

It is required that students will maintain an average grade point average of 3.00 or better in all course work. If a student receives a grade lower than B- in a required course, the course will have to be repeated. Whether the courses are required or elected, more than one grade of C+ or lower will be the basis for a formal Academic Review.

Program Flexibility and Individualization

An individual student's program should reflect the student's developing professional expertise, career goals, and personal interest. This program, therefore, maintains as much flexibility and individualization as possible.

This individualization is built upon the core curriculum through planning for elective course work and enrichment experiences, including teaching and research assistantships. The PhD program provides a set of structured and integrated core courses that can be applied to each students' area of specialization. This core curriculum is supplemented by six elective courses that allow students to obtain more depth in their specialization areas. Faculty advisors work closely with students in planning their course work and progress through the doctoral program.

A minimum of three years of full-time study is required for doctoral program completion. The curriculum is distributed between a nine-course core curriculum and elective courses followed by the comprehensive examination and doctoral dissertation.

Core Doctoral Curriculum

During the first two academic years in the program, students are primarily involved in taking the required courses in the four essential areas of study: social welfare, social science theory, research methods and statistics, and social policy. These core courses are provided by the doctoral program. A brief description of each area of study follows with a listing of credits awarded and terms offered. All 1st year students are required to take the non-credit Doctoral Seminar. More information on each doctoral course is available in the Student Handbook.

Required (Core) Courses

Research Methods (17 total credits)

- SWRES 3020 - RESEARCH METHODS 1
- SWRES 3029 - INFERNTL STAT SOCL WORKERS
- SWRES 3021 - MULTIVARIATE ANALYSIS
- SWRES 3022 - RESEARCH METHODS: CAPSTONE SEMINAR 1
- SWRES 3023 - RESEARCH METHODS: CAPSTONE SEMINAR 2
- SWRES 3066 - SEMINAR IN SOCIAL WORK EDUCATION - 3 credits
- Doctoral Seminar - 0 credits

Theory (6 total credits)

- SWGEN 3044 - THEORY 1
- SWGEN 3053 - THEORY 2

Policy (6 total credits)

- SWWEL 3030 - EVAL OF AMERICAN SOCIAL WELFARE
- SWWEL 3037 - SOCIAL POLICY ANALYSIS

Elective Courses (21 credits)
In addition to the above core course requirements, the student selects seven elective courses to pursue more specialized interests. All electives must be at least 2 credit graduate level courses with a credit total = 21 credits. Elective options available in the program, including the Joint Public Health Master's/Social Work PhD option and the graduate certificate in women's studies offer particular advantages but tend to restrict the number of electives open to students. Although some doctoral elective courses are offered within Social Work, students are encouraged to take relevant course work in other schools and departments of the University. Many social welfare-related fields are open: sociology, economics, women's studies, political science, law, urban affairs, public health, and others. The student can choose his or her courses from all graduate programs in the University. The students may take no more than two MSW courses for elective credit. All electives must be approved by the student's advisor as contributing to the student's area of specialization.

**Interdisciplinary Components of Doctoral Curriculum**

In addition to the core doctoral courses, the student has seven elective course selections to pursue more specialized interests. Certain options available in the program, especially the Joint Public Health Master's/Social Work PhD option and the graduate certificate in women's studies, offer particular advantages but tend to restrict the number of electives open to students. Students are encouraged to take graduate-level course work in other schools and departments of the University insofar as this is feasible within their program requirements. Many social welfare-related fields are open: sociology, economics, women's studies, social psychology, political science, law, urban affairs, public health, and others. The student can choose his or her courses from all graduate programs in the University. The student may take no more than two MSW courses as electives.

**Cooperative Degrees Program**

http://www.socialwork.pitt.edu/academics/master-social-work-msw

In addition to the MSW and PhD degrees, graduate students in the School of Social Work have the opportunity to select from several unique dual degree programs. MSW students can avail themselves of one of the eight joint or cooperative degree programs; two joint degree programs are available to PhD students.

Detailed below are joint degree programs offered by the School of Social Work in tandem with the Graduate School of Public and International Affairs, the Graduate School of Public Health, the School of Law, the School of Education, the School of Business, and the Pittsburgh Theological Seminary.

**MSW/Master of Public Administration, MSW/Master of Public and International Affairs, and MSW/Master of International Development**

Three unique joint degree programs are offered by the University of Pittsburgh School of Social Work, through its COSA concentration, and the Graduate School of Public and International Affairs. These joint programs provide students with a broad professional education to prepare them for eventual service in urban non-profit and government organizations, community development policy, and social and urban planning. They provide experienced students with opportunities to expand their knowledge base and enable other students to develop more marketable professional skills than are usually acquired through single-degree programs. Students in these joint programs earn a Master of Social Work from the School of Social Work and a Master of Public Administration, Master of Public and International Affairs or a Master of International Development from the Graduate School of Public and International Affairs.

Students must be admitted to both programs in order to qualify for admission to the joint degree program. Degree candidates must meet the minimum foundation, concentration, and specialized requirements of both schools, except where substitutions are appropriate and approved by the faculty advisors. Depending upon which joint degree program the student elects, the total number of credits required for graduation ranges from 72 to 88 credits. For most students, this means that individual programs can be completed within six to seven terms of full-time residency. Students electing to terminate the joint degree program before its completion must complete all the work required by the respective schools for either degree in order to receive that degree separately.

The easiest way to apply to the Master's Degree in Social Work Program at the University of Pittsburgh School of Social Work is to use our online application.

University of Pittsburgh
Graduate School of Public and International Affairs
MSW/Master of Public Health program

The MSW/MPH program requires a three year curriculum plan. Students will complete the required core courses in both the MSW and the MPH program. Selected required courses from each program will count as elective courses toward the degree in the other program. A reciprocal agreement between both programs with regards to the acceptance of student electives will facilitate effective curriculum planning.

The total number of credits to be taken will be 86 (50 in Social Work, and 36 in GSPH). Students will be required to complete two field placements (one in the first year and one in the second) as required by the MSW program, and as is consistent with the practicum requirements of the MPH program.

The second field placement will have a public health emphasis and count as the required MPH practicum experience. All students will be required to complete the GSPH Capstone course, and complete an essay as required by the MPH program. Students will be assigned faculty advisors from both SSW and GSPH and these advisors will work collaboratively with the student to plan the academic course of study.

Upon completion of the joint degree program, the student would receive the Master of Public Health and the Master of Social Work degrees from the respective schools. The curriculum is established in an effort to have the requirements for both degrees met by having certain classes at one school fulfill requirements at the other.

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For more information on the MSW/MPH program please contact:

University of Pittsburgh
School of Social Work
Office of Admissions
2104 Cathedral of Learning
University of Pittsburgh
Pittsburgh, PA 15260
(412) 624-6302
E-mail: sswadmissions@pitt.edu

MSW/Juris Doctorate

The School of Social Work (SSW) and the School of Law offer a cooperative educational program through which students may earn both the Master of Social Work (MSW), the primary professional degree in social work, and the Juris Doctor (JD) degree, the first professional degree in law. The MSW-JD program will enable students with interests in a wide range of areas where law and social work converge - such as child welfare, aging, health, mental health, juvenile and criminal justice, family issues, and housing - to engage in a highly integrative educational experience that will include academic courses, field placements, and research opportunities at the intersection of both professions. The joint degree program allows one to earn both degrees in four years rather than five.

Increasingly, social work professionals and attorneys are working together to promote the well-being of their clients. These areas of convergence exist in practice with individuals, families, and groups as well as with communities and organizations. The intersection of legal and social work concerns is also evident at the policy level, and research from both professional disciplines has been used to inform these activities. It is not uncommon for practitioners from both fields to work in concert to draft, implement, and/or advocate for legislation at the local, state, and federal levels.

The MSW-JD program is one among several programs that the Schools of Social Work and Law have jointly established throughout their long and rich history of collaboration.
Neither degree may be granted prior to fulfillment of all requirements for the joint degree program.

Faculty Advisors

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Master of Social Work/Master of Business Administration

Faced with an increasingly competitive market, nonprofit organizations are beginning to emulate management methods and paradigms being practiced by for-profit companies, such as financial operations, human resource and data management, market and economic analysis, and evidence-based strategic planning. As philanthropic organizations become more concerned about their accountability and utility of financial supports provided to various human service organizations, they are beginning to evaluate nonprofits beyond program outcomes or average cost per client to more advanced assessments, such as cost-efficiency and effectiveness and cost-benefit ratio. Unfortunately, such analytic methodologies are rarely offered to social work students by the traditional social work curriculum.

Initially, the proposed MSW/MBA dual-degree program will be open to the SSW's Community Organization and Social Action (COSA) students. Upon successful execution of this initiative, the school will lean towards opening the program to all MSW full-time students (Direct Practice students included).

Students who want to earn a dual-degree must gain acceptance into both graduate degree programs by applying separately to each school. The joint-degree program applicants will also be required to submit their Graduate Management Admission Test (GMAT) or Graduate Records Exam (GRE) examination scores to both schools.

Faculty Coordinator:

Dr. Hide Yamatani, Ph.D., MSW, MBA
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2112 Cathedral of Learning
Pittsburgh, PA 15260

Requests for further information concerning the Katz Graduate School of Business, see http://www.business.pitt.edu/katz/. Specific questions may be addressed to:

Dr. Rabikar Chatterjee, Ph.D.
Master of Social Work with a Secondary Education Teaching Certificate

Overview

The Master of Social Work with a Certificate of Advanced Study in Teaching in Secondary Education (MSW/CAST) combined program is designed to cultivate school-based practitioners that will have a wide range of skills for supporting vulnerable adolescents and families in urban school contexts. The MSW/CAST curriculum design incorporates the person-in-context approach of social work with culturally relevant secondary teaching methods. As such, graduates will be trained to identify, design, and facilitate programmatic responses to the unique needs of children in schools in urban communities, and also to enhance classroom teaching and student learning through their specialized evidence-based expertise.

The program is efficiently designed to be completed in two years (5 semesters). In the first year the bulk of the courses are taken in the School of Education, as students complete the teaching certification portion of the program. In this time students are trained to be secondary education teachers (grades 7-12) in one of five core disciplines: English, Mathematics, Science, Social Studies, or Foreign Language. Students will then shift to the second half of the program, where the bulk of the courses are taken in the School of Social Work and where students will earn an MSW degree over the course of 3 semesters. By combining courses of study in the School of Education and School of Social Work, graduates will:

1) Understand the learning environment of students in the urban settings
2) Utilize culturally relevant classroom instruction to promote academic growth of adolescents
3) Understand schools as organizations in context
4) Facilitate intervention programs and student support services that focus on the social and emotional needs of students

Upon successful completion of this combined program graduates will be awarded a Masters Degree in Social Work (MSW) from our direct practice concentration, and certifications in secondary school teacher (grades 7-12) and school social work (pending praxis and licensure exams for relevant certifications).

Admissions and Prerequisites

Candidates for this combined program will need to enter having completed sufficient credits at the baccalaureate or higher level in fields relevant to one of the five secondary teaching disciplines: English, Mathematics, Science, Social Studies or Foreign Language. If a candidate is from a related field and just shy of credits (e.g. political science), they may choose to take relevant courses prior to enrollment. Also, two education courses (6 total credits) are also required as prerequisites and are available the summer before the start of the program (Foundations of Special Education; Teaching English Language Learners). All prerequisites must be met by the start of the first fall semester of year 1.

Interested candidates should apply to the School of Social Work MSW program and the School of Education Instruction 1 program separately, indicating their interest in the MSW/CAST program where asked in the respective application materials. Applicant qualifications for each school will be reflective of the general standards of each individual program. Candidates who are accepted to both programs will be accepted to the combined program, and will be notified and welcomed to the upcoming cohort.

Program Requirements
Coursework. In this uniquely rigorous and efficient program, students will meet an adapted set of the core requirements of both schools, whereby a number of pre-approved courses electives in one program count dually toward course requirements in the other. The total number of credits taken will be 51-54 in Social Work and 22-25 in Education. These credits include required field experiences for both programs.

Fieldwork. The Professional Year (year 1) School of Education field experiences will consist first of ten hours a week during the fall semester observing and teaching in a grade 7-12 classroom alongside an experienced mentor teacher. In the spring semester, the students will complete a full-time student teaching experience in the same classroom. Then in the summer semester following year 1, students will complete their foundation field placement for the School of Social Work. Finally, the concentration field practicum for social work will occur in the fall and spring semesters of year two. This field practicum will be in a primary social work role within a school setting.

Tuition

Students will pay the tuition of whichever school they are enrolled in for the majority of their credits that term. Specifically, fall and spring Year 1 students will pay School of Education tuition, and the remainder of the program will be paid to the School of Social Work. Significant scholarship support is available to students in the program.

Employment

The secondary education focus, along with the 2 calendar year quickened pace, makes MSW/CAST program one-of-a-kind nationally. Upon graduation, students will be prepared to serve either a School Social Worker or a Classroom Teacher. To the teaching profession, graduates bring therapeutic, person-in-context, and family-relations perspectives that will uniquely equip them to build positive relations and supports for students in particularly challenging contexts. Conversely, a school social worker with teacher training will have enhanced skills to support teachers in identifying effective interventions to address psychosocial issues in the classroom. More broadly, a social work with teacher training will be able to construct and deliver instruction more effectively to impact change and understanding amongst his/her clients, colleagues, and staff.

In sum, graduates of this program are uniquely qualified for, although not limited to, work in high need urban educational environments. Ultimately, this degree is a rare and powerful distinction for individuals looking for enhance their preparation and employability in secondary schools.

Contact Us

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PhD Joint Degree Programs

The School of Social Work offers two joint degree programs to PhD students: one leading to the MSW and the PhD and another with the Graduate School of Public Health. (Separate applications are required for either MSW or MPH admission.)

Social Work, JD/MSW

Master of Social Work/Juris Doctorate

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Social Work, MID/MSW

Joint Degree Programs with the Graduate School of Public and International Affairs

Master of Social Work/Master of Public Administration
Master of Social Work/Master of Public and International Affairs
MSW/Master of International Development

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Students must be admitted to both programs in order to qualify for admission to the joint degree program. Degree candidates must meet the minimum foundation, concentration, and specialized requirements of both schools, except where substitutions are appropriate and approved by the faculty advisors. Depending upon which joint degree program the student elects, the total number of credits required for graduation ranges from 72 to 88 credits. For most students, this means that individual programs can be completed within six to seven terms of full-time residency. Students electing to
terminate the joint degree program before its completion must complete all the work required by the respective schools for either degree in order to receive that degree separately.

**Graduate School of Public and International Affairs**


We live in a world both illuminated by great hope and darkened by great conflict. Make a difference and take the lead. Prepare yourself with a comprehensive education from the Graduate School of Public and International Affairs (GSPIA) at the University of Pittsburgh.

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**Social Work, MPA/MSW**

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Social Work, MPH/MSW

MSW/MPH

MSW/Master of Public Health Program
The MSW/MPH program requires a three year curriculum plan. Students will complete the required core courses in both the MSW and the MPH program. Selected required courses from each program will count as elective courses toward the degree in the other program. A reciprocal agreement between both programs with regards to the acceptance of student electives will facilitate effective curriculum planning.

The total number of credits to be taken will be 87 (51 in Social Work and 36 in GSPH). Students will be required to complete two field placements (one in the first year and one in the second) as required by the MSW program, and as is consistent with the practicum requirements of the MPH program.

The second field placement will have a public health emphasis and count as the required MPH practicum experience. All students will be required to complete the GSPH Capstone course and complete an essay as required by the MPH program. Students will be assigned faculty advisors from both SSW and GSPH and these advisors will work collaboratively with the student to plan the academic course of study.

Upon completion of the joint degree program, the student would receive the Master of Public Health and the Master of Social Work degrees from the respective schools. The curriculum is established in an effort to have the requirements for both degrees met by having certain classes at one school fulfill requirements at the other.

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For more information on the MSW/MPH program please contact:

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Office of Admissions
2104 Cathedral Of Learning
412-624-6302
E-mail: sswadmissions@pitt.edu
www.socialwork.pitt.edu/admissions/

Social Work, MPH/PhD

The University of Pittsburgh School of Social Work and the Graduate School of Public Health Center for Maternal and Child Health Leadership Training in Public Health Social Work (based in the Department of Behavioral and Community Health Sciences) program has been in operation since 1965 and represents a unique collaboration. The program's primary objectives are to train social workers for leadership positions in public health systems and prepare them for research and teaching posts.

The program emphasizes a broad range of maternal and child health issues, including infant mortality reduction, adolescent health, youth and maternal substance abuse, services to children with disabilities, injury and violence prevention, child abuse and neglect, pediatric AIDS, and others. The program has excellent links with both the local and state maternal and child health systems as well as with the federal Maternal and Child Health Bureau. Students have numerous opportunities to work with local organizations on a variety of planning, evaluation, and research activities. In recent years, a number of students have participated in federally sponsored summer internship experiences.

The program offers students a joint program to study for both a PhD in Social Work and a Master of Public Health (MPH).

The joint MPH/PhD program, is designed for social workers seeking administrative, policy, and/or academic positions. The overall training program clearly emphasizes leadership training rather than basic professional preparation. All trainees are Masters of Social Work (MSWs) (or equivalent) with at least two years of professional practice experience.

Master of Public Health/Doctor of Philosophy (PhD) in Social Work | School of Social Work | University of Pittsburgh

Objectives

The overall educational objective of the project is to provide the trainees with a "public health approach" to maternal and child health.

This involves:
A primary focus on populations at risk rather than individuals
- Use of an interdisciplinary approach
- A focus on primary prevention of social and health problems
- Reliance on systematic data collection and analysis for administrative decision making

The learning objectives include:

- Understanding incidence, prevalence, prevention, treatment, and epidemiological trends of the health and social needs of mothers and children
- Becoming aware of the health and social work systems available for prevention, treatment, and rehabilitation
- Understanding the interrelationship of the identified population-at-risk with other populations needing maternal and child health services
- Understanding the impact of socioeconomic, racial, cultural, geographical, and financial factors on health service delivery and use
- Understanding the technical and legal issues related to service delivery to the population-at-risk
- Understanding the implications of legislation and policy on program funding, planning and development, and patterns of service delivery

It is expected that graduates also will be prepared through the educational experience to:

- Coordinate maternal and child health services within primary, secondary, and tertiary sites
- Effectively access and allocate federal, state, county, and local resources for maternal and child health services
- Develop and coordinate regional public health and social work services for mothers and children
- Develop social work consultation and training skills and apply them to interdisciplinary settings
- Use epidemiological data and statistics, and conduct community needs assessments to support program and policy development
- Prepare technical reports, proposals, and publications

### Academic Curriculum

The MPH/PhD curriculum comprises core courses in public health and social work, with a heavy emphasis on research methods and statistics.

Specific classes on maternal and child health and public health social work are also required for this degree program. The following list of courses is provided as an example, as the exact course requirements may vary by student.

#### Requirements:

This joint degree requires the completion of a minimum of 81 credits, a comprehensive examination and successful defense of a dissertation.

Graduate Students in the joint MPH/PhD program generally apply 12 credits from the MPH curriculum toward their elective course work for the PhD.

### Social Work, MPIA/MSW

#### Joint Degree Programs with the Graduate School of Public and International Affairs

### Master of Social Work/Master of Public Administration

### Master of Social Work/Master of Public and International Affairs

### MSW/Master of International Development

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Work and a Master of Public Administration, Master of Public and International Affairs or a Master of International Development from the Graduate School of Public and International Affairs.

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Social Work, MSW/MDiv

Social work and theology have many historical, philosophical, and applied commonalities. In an effort to integrate the two educational experiences and prepare professionals competent to integrate their practice skills, the School of Social Work, in cooperation with the Pittsburgh Theological Seminary, has developed a cooperative degree program leading to the Master of Social Work and Master of Divinity degrees.

This program provides a full social work and theological education that may be completed in four years by virtue of mutual and reciprocal educational planning between the institutions. Candidates for the degrees normally enter the seminary and concentrate on theological studies during the first two years of the program. The third and fourth years are spent primarily in the School of Social Work with approximately one course each
term being taken at the seminary. Students electing to terminate the cooperative degree program before its completion must complete all the work required by the respective institutions for either degree in order to receive that degree separately. Applications for admission are processed independently by each institution.

Requests for further information concerning the Pittsburgh Theological Seminary and its various programs may be addressed to the Director of Admissions, Pittsburgh Theological Seminary, 616 North Highland Avenue, Pittsburgh, PA 15206, or call 412-362-5610, ext. 2116. The seminary's Web site is www.pts.edu.

Social Work, MSW/PhD

An MSW degree from an accredited school of social work is required to be considered for admission to our PhD program. Those applicants without an MSW degree, who wish to pursue an social work academic career, can apply to the joint MSW/Ph.D. program. Such applicants typically are interested in grounding themselves in the practice base of the social work profession, while also seeking to develop their advanced research and teaching expertise.

If you are interested in a faculty position in a school of social work after completing your PhD, please note that the Council on Social Work Education, the accrediting body for social work undergraduate and master's programs, requires that social work practice courses be taught by faculty with the MSW plus the equivalent of two years of full time practice experience. Therefore, it is strongly recommended that individuals who do not possess an MSW and who desire an academic position in a school of social work consider the option of our joint MSW-PhD program. We also strongly encourage those who do not have the requisite practice experience to obtain it before completing their PhD., preferably before entering the program.

Separate applications are required for admission to each program. Those seeking further information regarding this dual degree program are encouraged to contact Dr. Jeffrey Shook, director of the doctoral program, (412) 648-9365, jes98@pitt.edu.
University Center for International Studies

The University Center for International Studies (UCIS) is the primary resource for initiating and managing international programs, studies and support services while promoting the University's reputation as a leader in global education. A key goal of UCIS is to cultivate globally capable and engaged students toward lives of impact in their community and beyond. In short, to prepare graduate students who are global ready. This is achieved by certificate programs, study abroad, curriculum development, and seminars. UCIS offers 7 graduate certificates, which are academic credentials that attest to acquisition of international knowledge about a particular world region or global issue, cross-cultural understanding, and language proficiency relevant for international careers or for advanced degrees. Certificates are available in:

- African Studies
- Asian Studies
- European Union Studies
- Global Studies
- Latin American Studies
- Russian Studies
- West European Studies

The certificates are administered through the African Studies Program, Asian Studies Center, European Studies Center, Global Studies Center, Center for Latin American Studies, and the Center for Russian and East European Studies. Four centers--European Studies Center, Global Studies, Latin American Studies, and Russian and East European Studies--are designated by the federal government as National Resource Centers.

UCIS certificates evidence language proficiency, regional knowledge and cultural competency that students find useful for international careers.

Contact Information

University of Pittsburgh
University Center for International Studies
4413 Wesley W. Posvar Hall
Pittsburgh, PA 15260
412-648-7390
btorres@pitt.edu
www.ucis.pitt.edu

Admission to Certificate Programs

For admission, graduate students must first apply to the relevant professional school or academic department within the Dietrich School of Arts and Sciences. Applicants are encouraged to contact a UCIS international advisor as early as possible with questions about their interest in a world region or global issue. Formal admission to the UCIS certificate programs is accomplished by completing a simple application form. Generally, no additional tuition is charged for enrollment as a certificate student. Students holding a master's degree from an accredited institution may obtain any of the UCIS graduate certificates without enrolling in a graduate degree program at the University of Pittsburgh. They may apply directly to the UCIS center or program if they wish to enroll only in the certificate program.

Certificate Requirements

UCIS Graduate certificates are awarded after completion of all certificate requirements as well as completion of all requirements for the master's degree, or after the student has passed the comprehensive examinations for the doctorate. Upon graduation, both the academic degree and the certificate are posted on the student's transcript. Specific certificate requirements for each international studies certificate are listed under the program offerings below.

Advising
All UCIS certificate programs provide personalized advising services to students interested or registered in its programs in addition to those routinely offered by the students’ major advisors. Center advisors assist in selecting courses, language training, and arranging internships or study abroad to fit the students' academic and personal interests. See the program offerings below for contact information.

**Program Offerings**

- African Studies Certificate
- Asian Studies Certificate
- European Union Studies, ADVCT
- Global Studies Certificate
- Latin American Studies Certificate
- Russian and East European Studies Certificate
- West European Studies, ADVCT

**Special Academic Opportunities**

For an overview of the many opportunities and resources that are available to students through UCIS, please visit www.ucis.pitt.edu/main/students

**myPittGlobal**

This new student platform is your one-stop-shop to integrate the curricular achievements with study abroad, civic & global engagement and professional development opportunities. The online tools will help you access all UCIS academic programs, study abroad, international events and activities, advisors and your peers. To learn more, click here.

**UCIS Affiliated Faculty**

**African Studies Program**

http://www.ucis.pitt.edu/africa/faculty

**Asian Studies Center**

http://www.ucis.pitt.edu/asc/academics/faculty

**Center for Latin American Studies**

http://www.ucis.pitt.edu/clas/faculty_list

**Center for Russian & East European Studies**

http://www.ucis.pitt.edu/crees/about/faculty

**European Studies Center**
The Graduate Certificate

The African Studies Program offers the graduate certificate in African Studies designed to provide students the opportunity for the interdisciplinary study of Africa. Students seeking a graduate degree at any school within the University may pursue a graduate certificate in African Studies by enrolling in the program and meeting the stipulated requirements. The Graduate Certificate program is specifically designed for graduate students who desire an opportunity to intensify their study of Africa and develop real insights into issues of critical importance in their fields of research and career interests as relates to Africa. The program provides students with fundamental grounding in African Studies through exposure to the major areas of research and knowledge on Africa in their respective disciplines. In addition, students are provided with opportunities to participate in research projects, symposia, lectures, conferences, and workshops on Africa. They are also encouraged to participate in internship opportunities with a specific focus on Africa.

Admission to the Certificate Program

Although formal admission to the program is allowed at any point in the student's academic career, students are encouraged to apply for admission early enough to allow them ample time to complete all the requirements in a timely manner. Application information can be obtained from the African Studies Web site or students can apply for admission to the program at our office.

African Studies Certificate

Contact Information

Dr. Macrina Lelei, Associate Director
African Studies Program
4137 Wesley W. Posvar Hall
Pittsburgh, PA 15260
412-648-2058
The African Studies Program offers the graduate certificate in African Studies designed to provide students the opportunity for the interdisciplinary study of Africa. Students seeking a graduate degree at any school within the University may pursue a graduate certificate in African Studies by enrolling in the program and meeting the stipulated requirements. The Graduate Certificate program is specifically designed for graduate students who desire an opportunity to intensify their study of Africa and develop real insights into issues of critical importance in their fields of research and career interests as relates to Africa. The program provides students with fundamental grounding in African Studies through exposure to the major areas of research and knowledge on Africa in their respective disciplines. In addition, students are provided with opportunities to participate in research projects, symposia, lectures, conferences, fellowships, internships and workshops on Africa.

Certificate Requirements

Graduate students may earn a certificate in African Studies upon completion of the following requirements:

- A total of six African Studies courses (18 credits) is required. Any Graduate Class can count towards the African Certificate if there is at least 25% African content and individual students focus on an issue or country in Africa while doing their project and or research paper for the class. In special instances, with the consent of the academic advisor, approved upper-level undergraduate courses may be accepted. For a full list of approved courses, click here.
- Graduate students should complete a minimum of 6 unique credits of coursework. In other words, at least 6 credits of the course work used to complete the requirements of any graduate level certificate in UCIS must be in addition to the credits used to complete the student's primary degree program. In consultation with the academic advisor, students may fulfill these standards through one of the following options:
  - Students may contextualize non-credit bearing internships that are required in various graduate degree programs as credit bearing experiences for UCIS certificate programs. Prior approval must be received from the academic advisor to pursue this option.
  - Students who can add content courses without affecting their tuition bill will be encouraged to do so.
  - Students who are exempt from the language requirement because of previous coursework or heritage language skills may use language course credits towards the requirement for "additional work beyond the graduate degree.
- The 6 credits may be comprised of the following combinations:
  - Two language courses (* see notes below)
  - A language course (* see notes below) and a content course
  - Two content courses

* Language courses may be used in the following circumstances:

  For certificate programs that require three years of language proficiency, students may count language courses in the third year (i.e. grammar, conversation, courses taught in target language) that are above the intermediate level.

  For students in any certificate program who are exempt from the language requirement due to previous coursework or as a heritage speaker, the introductory courses in a second language (either LCTLs, or a commonly taught language with a clear and stated relevance to their research or professional goals) will count.

  For students completing two graduate level UCIS certificates, at least nine (9) credits of the course work used to complete the certificate requirements must be in addition to the credits used to complete the student's primary degree program. At least 3 of these credits must be in content coursework. All 9 cannot be language course credits.

* Language proficiency: Two years of college level study of an African language or equivalent Proficiency of a European language other than English relevant to African Studies as a consequence of Africa's historical experience (French, German, Portuguese and Spanish).
* A Research Paper focused on the area of concentration under the supervision of an African Studies faculty member written for a graduate class.
* GPA requirement is 2.5 for all courses to be counted towards the African Studies Certificate.

Asian Studies Center
The Asian Studies Center at the University of Pittsburgh is widely recognized as being among the best and most comprehensive in the country in research, public service, and teaching about East Asia. The center's mandate is to promote an enhanced understanding of East Asia, South Asia, Southeast Asia, and the Pacific Islands through exceptional undergraduate and graduate academic programs, strong interdisciplinary faculty development, and energetic community outreach. ASC has nationally recognized programs in Chinese and Japanese language and culture studies, with growing strengths in Indian and Korean studies. Its affiliated faculty spans the disciplines. Typically more than 3,500 graduate and undergraduate students enroll each year in Asia-related courses. Undergraduate students from any field or school interested in Asia can supplement and strengthen their major field of study by enrolling in the Asian Studies certificate program.

The East Asian Library (EAL)

http://www.library.pitt.edu/east-asian-library

Located in Hillman Library, the EAL contains significant collections of books and periodicals in both the Chinese and Japanese languages, in addition to materials in English and other Western languages housed in the general collections. Those pursuing research on current topics concerned with Japan can make use of the Japan Information Center (JIC), which gives users direct access to a wide array of government documents, economic reports, and a wide range of data related to social and economic issues.

Financial Assistance

Asian Studies Certificate students may be eligible for a variety of scholarships and research awards. For information, visit http://www.ucis.pitt.edu/asc/funding/graduate

Asian Studies Certificate

Advanced Certificate Requirements

The Advanced Certificate in Asian Studies may be earned by U.S. and international students from any department or school at the University. The certificate combines the language training and multidisciplinary area studies necessary for both communicative and cultural competence. The certificate is designed for students who wish to intensify their study of Asia, either because they would like to be able to use their knowledge of that
critical part of the world in their careers after graduation, or because they recognize the importance of an understanding of Asian history, language, and culture for all well-informed people.

- A minimum of five upper-level courses or graduate seminars dealing with Asia, in at least two departments. The five courses must include one seminar outside the student's major department.
- Graduate students should complete a minimum of 6 unique credits of coursework. In other words, at least 6 credits of the course work used to complete the requirements of any graduate level certificate in UCIS must be in addition to the credits used to complete the student's primary degree program. In consultation with the academic advisor, students may fulfill these standards through one of the following options:

- Students may contextualize non-credit bearing internships that are required in various graduate degree programs as credit bearing experiences for UCIS certificate programs. Prior approval must be received from the academic advisor to pursue this option.
- Students who can add content courses without affecting their tuition bill will be encouraged to do so.
- Students who are exempt from the language requirement because of previous coursework or heritage language skills may use language course credits towards the requirement for "additional work beyond the graduate degree.
- The 6 credits may be comprised of the following combinations:
  - Two language courses (* see notes below)
  - A language course (* see notes below) and a content course
  - Two content courses

* Language courses may be used in the following circumstances:

For certificate programs that require three years of language proficiency, students may count language courses in the third year (i.e. grammar, conversation, courses taught in target language) that are above the intermediate level.

For students in any certificate program who are exempt from the language requirement due to previous coursework or as a heritage speaker, the introductory courses in a second language (either LCTLs, or a commonly taught language with a clear and stated relevance to their research or professional goals) will count.

For students completing two graduate level UCIS certificates, at least nine (9) credits of the course work used to complete the certificate requirements must be in addition to the credits used to complete the student's primary degree program. At least 3 of these credits must be in content coursework. All 9 cannot be language course credits.

- A research paper. The student can fulfill this requirement by presenting either an interdisciplinary seminar paper or thesis (which draws upon more than one scholarly discipline). The paper can be used to complete departmental requirements for a graduate degree as well as for the certificate, but must include research using the student's approved Asian language.
- Demonstration of proficiency in reading and speaking an approved Asian language related to one of the student's countries or regions of interest. Proficiency is interpreted to mean at least three years of study or the equivalent, and may be demonstrated by successfully completing courses or by passing a special examination.
- GSPIA option: Students enrolled in the Graduate School of Public and International Affairs (GSPIA) may fulfill a more targeted set of requirements for their program. For details, visit http://www.ucis.pitt.edu/asc/academics/certificate-program/graduate-certificate-program
- GPA requirement is 3.0 for all courses to be counted towards the Asian Studies Certificate.

Financial Assistance

Asian Studies Certificate Students are eligible for a variety of scholarships, grants, and fellowships for research, presentations at conferences, language learning, and tuition replacement. For information visit http://www.ucis.pitt.edu/asc/funding/graduate.

European Studies Center

Contact Information
Since 1984, the European Studies Center formerly (ESC) has offered a strong curriculum on Europe by bringing together the rich assets of a major research university to create a unique learning community. The ESC has developed an international scholarly reputation in European Union studies and was selected by the European Commission to host one of only ten European Union Centers of Excellence in the United States.

Hillman Library at the University of Pittsburgh has been a depository library for EU publications since 1974. Dr. Phil Wilkin, the West European bibliographer, has developed the Archive of European Integration that provides a wide array of EU-related documents through the Web. Please visit http://aei.pitt.edu for details.

Financial Assistance

The ESC offers several possible funding opportunities to students in its certificate program. Please visit http://www.ucis.pitt.edu/euce/content/graduate-student-funding-opportunities for further details.

European Union Studies, ADVCT

The Certificate of Advanced Study-European Union Studies enables students to complement a graduate or professional degree in any discipline (including the sciences) with an interdisciplinary set of courses related to the EU and proficiency in a relevant language. Students may enroll in the Certificate through the European Studies Center (ESC) or the Center for Russian and Eastern European Studies (REES).

Requirements:

Students seeking the Certificate of Advanced Study-European Union Studies must fulfill the following requirements:

- Complete 18 credits of EU studies courses in at least two schools or disciplines, with at least nine credits from outside the student's home department or school. Six credits must be selected from the list of core courses. Courses must be approved by the ESC.
- Graduate students should complete a minimum of 6 unique credits of coursework. In other words, at least 6 credits of the course work used to complete the requirements of any graduate level certificate in UCIS must be in addition to the credits used to complete the student's primary degree program. In consultation with the academic advisor, students may fulfill these standards through one of the following options:
  - Students may contextualize non-credit bearing internships that are required in various graduate degree programs as credit bearing experiences for UCIS certificate programs. Prior approval must be received from the academic advisor to pursue this option.
  - Students who can add content courses without affecting their tuition bill will be encouraged to do so.
  - Students who are exempt from the language requirement because of previous coursework or heritage language skills may use language course credits towards the requirement for "additional work beyond the graduate degree.
- The 6 credits may be comprised of the following combinations:
  - Two language courses (* see notes below)
  - A language course (* see notes below) and a content course
  - Two content courses
- Language courses may be used in the following circumstances:
For certificate programs that require three years of language proficiency, students may count language courses in the third year (i.e. grammar, conversation, courses taught in target language) that are above the intermediate level.

For students in any certificate program who are exempt from the language requirement due to previous coursework or as a heritage speaker, the introductory courses in a second language (either LCTLs, or a commonly taught language with a clear and stated relevance to their research or professional goals) will count.

For students completing two graduate level UCIS certificates, at least nine (9) credits of the course work used to complete the certificate requirements must be in addition to the credits used to complete the student's primary degree program. At least 3 of these credits must be in content coursework. All 9 cannot be language course credits.

☐ For the approved course list, click here.
☐ Write an interdisciplinary research paper of 15-25 pages that ideally entails the use of second language materials. The paper may be prepared for a course, but students are urged to conceptualize it with the certificate in mind.
☐ Language proficiency: Students must have three years of progressive college-level instruction in an official EU Member State or official EU candidate country language other than English, or the equivalent proficiency. Students for whom English is a second language may use English to meet the requirement.
☐ Participate in an EU-related cocurricular activity approved by the ESC’s Graduate Advisor.
☐ Be awarded a graduate or professional degree.

For the full requirements for the graduate certificate, please click here.

West European Studies, ADVCT

Graduate Advisor: Dr. Allyson Delnore
European Studies Center
4215 Wesley W. Posvar Hall
Phone: 412-624-5404
adelnore@pitt.edu
http://www.ucis.pitt.edu/esc/

Certificate of Advanced Study

The Certificate of Advanced Study-West European Studies enables students to complement a graduate or professional degree in any discipline (including the sciences) with an interdisciplinary set of courses related to Western Europe and proficiency in a relevant language.

Requirements:

Students seeking the Certificate of Advanced Study-West European Studies must fulfill the following requirements:

☐ Complete 18 credits of West European Studies courses in at least two schools or disciplines, with at least nine credits from outside the students home department or school. Distribution of these 18 credits is tailored to each academic program. Courses must be approved by the ESC.
☐ Graduate students should complete a minimum of 6 unique credits of coursework. In other words, at least 6 credits of the course work used to complete the requirements of any graduate level certificate in UCIS must be in addition to the credits used to complete the student's primary degree program. In consultation with the academic advisor, students may fulfill these standards through one of the following options:
☐ Students may contextualize non-credit bearing internships that are required in various graduate degree programs as credit bearing experiences for UCIS certificate programs. Prior approval must be received from the academic advisor to pursue this option.
☐ Students who can add content courses without affecting their tuition bill will be encouraged to do so.
☐ Students who are exempt from the language requirement because of previous coursework or heritage language skills may use language course credits towards the requirement for "additional work beyond the graduate degree.
☐ The 6 credits may be comprised of the following combinations:
☐ Two language courses (* see notes below)
☐ A language course (* see notes below) and a content course
☐ Two content courses
* Language courses may be used in the following circumstances:

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For certificate programs that require three years of language proficiency, students may count language courses in the third year (i.e. grammar, conversation, courses taught in target language) that are above the intermediate level.

For students in any certificate program who are exempt from the language requirement due to previous coursework or as a heritage speaker, the introductory courses in a second language (either LCTLs, or a commonly taught language with a clear and stated relevance to their research or professional goals) will count.

For students completing two graduate level UCIS certificates, at least nine (9) credits of the coursework used to complete the certificate requirements must be in addition to the credits used to complete the student's primary degree program. At least 3 of these credits must be in content coursework. All 9 cannot be language course credits.

☐ For a listing of approved courses, click here.
☐ Write an interdisciplinary research paper of 15-25 pages that ideally entails the use of second language materials. The paper may be prepared for a course, but students are urged to conceptualize it with the certificate in mind.
☐ Language proficiency: Students must have three years of progressive college-level instruction in a West European language other than English, or the equivalent proficiency. Students for whom English is a second language may use English to meet the requirement.
☐ Be awarded a graduate or professional degree.
For the full requirements for the graduate certificate, please click here.

Global Studies Program

Contact Information

Graduate Advisor: Elaine Linn
Assistant Director for Global Studies
Global Studies Program
4101 Wesley W. Posvar Hall
412-648-2113
Fax: 412-624-4672
E-mail: global@pitt.edu
www.ucis.pitt.edu/global

The Global Studies Program provides students with a "global competence," the ability to communicate effectively across cultural and linguistic boundaries and to focus on issues that transcend cultures and continents. The global studies graduate certificate is a joint offering of the University Center for International Studies (UCIS) and the Graduate School of Public and International Affairs (GSPIA), and is open to all students enrolled in a graduate program at the University.

The Global Studies Program draws on the strengths of the Area Studies Centers within the University Center for International Studies and the departments and schools at the University of Pittsburgh. The Asian Studies Center, the Center for Latin American Studies, the Center for Russian and East European Studies, and the Center for West European Studies have been designated by the U.S. Department of Education as National Resource Centers. The University Library System possesses extensive holdings of books and journals to support research and study in these world areas.

Admission to Global Studies Program

Applications to the Global Studies Program may be submitted either at the same time as applications to the University or after the student has been admitted. In either case, students cannot be accepted until they have received notification of admission to the University of Pittsburgh.

Students holding a master's degree from an accredited institution may obtain the Graduate Certificate in Global Studies. They may apply directly to the program if they wish to enroll only for the graduate certificate.

Global Studies Faculty Affiliates
Global Studies Certificate

University of Pittsburgh
University Center for International Studies
Global Studies Center
Elaine Linn, Assistant Director for Academic Affairs
4102 Wesley W. Posvar Hall
Pittsburgh, PA 15260
Phone: 412-648-2113
eel58@pitt.edu
http://www.ucis.pitt.edu/global/

Global Studies is an exciting - and evolving - interdisciplinary field. It is concerned with transnational structures, processes, and interactions, and how these affect social, economic, cultural, political, and ecological environments. Scholars of Global Studies understand and analyze how these structures, processes, and interactions both connect people and places and disrupt established norms, communities, institutions, and relationships. That is, they think globally about these processes.

Within the Global Studies Certificate, graduate students from the Dietrich School of Arts and Sciences can tailor a unique plan of interdisciplinary study within their field of interest drawn from more than 200 courses across 6 global concentrations. The certificate allows students to adopt a transnational lens that can inform their research projects, and to conduct research in one of 35 languages offered at Pitt.

Global Concentrations: To complete the certificate, student choose one of five global concentration/themes:

- Cultural Dynamics-Being
- Peace, Conflict, and Security
- Ecology and Sustainability
- Health and Well
- Politics and Economy

In addition to the certificate, the Global Studies Center offer numerous complementary programs and opportunities that support students' intellectual and personal development: research skills, career exploration and career readiness, experiential education and civic engagement, and a critical understanding of current events. The center offers travel grants, Foreign Language and Area Studies Scholarships (FLAS) in six less commonly taught languages, and student ambassador positions.

Certificate Requirements

Six Global Thematic Courses (18 credits): After students select a global concentration, they choose from a comprehensive and dynamic list of courses ensuring three disciplines are represented to provide an interdisciplinary perspective on their chosen global concentration.

- Graduate students should complete a minimum of 6 unique credits of coursework. In other words, at least 6 credits of the course work used to complete the requirements of any graduate level certificate in UCIS must be in addition to the credits used to complete the student's primary degree program. In consultation with the academic advisor, students may fulfill these standards through one of the following options:
  - Students may contextualize non-credit bearing internships that are required in various graduate degree programs as credit bearing experiences for UCIS certificate programs. Prior approval must be received from the academic advisor to pursue this option.
  - Students who can add content courses without affecting their tuition bill will be encouraged to do so.
  - Students who are exempt from the language requirement because of previous coursework or heritage language skills may use language course credits towards the requirement for "additional work beyond the graduate degree.
- The 6 credits may be comprised of the following combinations:
  - Two language courses (* see notes below)
  - A language course (* see notes below) and a content course
  - Two content courses

* Language courses may be used in the following circumstances:
For certificate programs that require three years of language proficiency, students may count language courses in the third year (i.e. grammar, conversation, courses taught in target language) that are above the intermediate level.

For students in any certificate program who are exempt from the language requirement due to previous coursework or as a heritage speaker, the introductory courses in a second language (either LCTLs, or a commonly taught language with a clear and stated relevance to their research or professional goals) will count.

For students completing two graduate level UCIS certificates, at least nine (9) credits of the coursework used to complete the certificate requirements must be in addition to the credits used to complete the student's primary degree program. At least 3 of these credits must be in content coursework. All 9 cannot be language course credits.

Language Proficiency: Building on Pitt's vast offering of over 30 languages, a minimum of three years of college-level study (six semesters) in a foreign language is required. Students can fulfill this requirement by passing a proficiency exam at the Intermediate mid proficiency level.

Global Studies Capstone Research Paper: This research paper is the culmination of a student's learning experience related to their global concentration. It demonstrates analytical skills within a transnational context. It must be written as part of a course and graded by a faculty member.

Center for Latin American Studies

Contact Information

University of Pittsburgh
University Center for International Studies
Center for Latin American Studies
Luis G. Van Fossen Bravo, Undergraduate Advisor
4202 Wesley W. Posvar Hall
Pittsburgh, PA 15260
412-648-7393
bravo@pitt.edu
www.ucis.pitt.edu/clas

The Center for Latin American Studies (CLAS), established in 1964, is internationally recognized for excellence in undergraduate, graduate, and professional education. In 1979 the U.S. Department of Education designated CLAS as a comprehensive National Resource Center (NRC) on Latin America—a distinction it has retained continuously to the present.

CLAS' programs cover the entire Latin American and Caribbean region. Two academic programs are especially noteworthy: The Latin American Archaeology Program, housed in the Department of Anthropology, involves research, training, and publications and emphasizes collaboration between North American and Latin American archaeologists. Fellowships and a bilingual publication series (funded by the Howard Heinz Endowment and The Andrew W. Mellon Foundation) further enhance this exceptional program. The Latin American Social and Public Policy Program draws on the impressive array of faculty and student expertise on Latin American policy issues available at the University of Pittsburgh. The program brings together researchers from different fields with the goal of contributing information of relevance to policy decisions facing Latin America. Social and Public Policy Fellowships are annually awarded to scholars interested in studying various dimensions of social policy at the University of Pittsburgh. The Latin American Social and Public Policy Graduate Certificate is available to students in this more specialized program.

Admission to the Center for Latin American Studies

http://www.ucis.pitt.edu/clas/grnd_admissions

Applications to the Center for Latin American Studies may be submitted either at the same time as applications to the University or after the student has been admitted. In either case, the center cannot accept students until they have received notification of admission to the University.
Latin American Library Collection

http://www.library.pitt.edu/eduardo-lozano-latin-american-collection

One of the major resources on Latin America available to students at the University of Pittsburgh is the Eduardo Lozano Latin American Library Collection. Its resources include exceptional collections on Bolivia and Cuba as well as extensive holdings on Argentina, Brazil, Ecuador, Guatemala, Mexico, Peru, and Venezuela.

Financial Assistance

Latin American Studies offers a variety of financial assistance to students in its certificate programs. Please visit http://www.ucis.pitt.edu/clas/grad_funding for further details.

Latin American Studies Certificate

University of Pittsburgh
University Center for International Studies
Center for Latin American Studies
Luis G. Van Fossen Bravo, Graduate Advisor
4207 Wesley W. Posvar Hall
Pittsburgh, PA 15260
412-648-7393
bravo@pitt.edu
www.ucis.pitt.edu/clas

Requirements for Certificates

CLAS offers two graduate certificates: the Certificate in Latin American Studies and the Certificate in Latin American Social and Public Policy. Requirements for each are detailed below. GPA requirement is 3.0 for all courses to be counted toward any Latin American Studies Certificate. For a list of approved courses, click here.

☐ Graduate students should complete a minimum of 6 unique credits of coursework. In other words, at least 6 credits of the course work used to complete the requirements of any graduate level certificate in UCIS must be in addition to the credits used to complete the student's primary degree program. In consultation with the academic advisor, students may fulfill these standards through one of the following options:
☐ Students may contextualize non-credit bearing internships that are required in various graduate degree programs as credit bearing experiences for UCIS certificate programs. Prior approval must be received from the academic advisor to pursue this option.
☐ Students who can add content courses without affecting their tuition bill will be encouraged to do so.
☐ Students who are exempt from the language requirement because of previous coursework or heritage language skills may use language course credits towards the requirement for "additional work beyond the graduate degree.
☐ The 6 credits may be comprised of the following combinations:
☐ Two language courses (* see notes below)
☐ A language course (* see notes below) and a content course
☐ Two content courses
* Language courses may be used in the following circumstances:

For certificate programs that require three years of language proficiency, students may count language courses in the third year (i.e. grammar, conversation, courses taught in target language) that are above the intermediate level.

For students in any certificate program who are exempt from the language requirement due to previous coursework or as a heritage speaker, the introductory courses in a second language (either LCTLs, or a commonly taught language with a clear and stated relevance to their research or professional goals) will count.
For students completing two graduate level UCIS certificates, at least nine (9) credits of the course work used to complete the certificate requirements must be in addition to the credits used to complete the student's primary degree program. At least 3 of these credits must be in content coursework. All 9 cannot be language course credits.

Graduate Certificate in Latin American Studies

To fulfill the requirements for this certificate, students must complete six Latin American area studies courses: two courses in the student's major department or school and four courses in at least two departments/schools other than that in which the student is receiving the advanced degree. The courses should total 18 credits. In addition, students are required to be proficient in a language of the area and to submit a research paper as detailed below.

Graduate Certificate in Latin American Social and Public Policy

To fulfill the requirements for this certificate, students must complete six courses focusing on social and public policy issues of Latin America: three courses should be in the student's major department or school and three courses should be in at least two departments/schools other than that in which the student is receiving the advanced degree. The courses should total 18 credits. In addition, students are required to be proficient in a language in their area and to present a research paper as detailed below.

Language Proficiency

The certificates in CLAS require three years, or the equivalent, of college-level Spanish, Portuguese, or an Amerindian language of the area. Students must have adequate proficiency to converse and conduct research in Latin America. A standardized examination is given to each candidate by a faculty member of the Department of Hispanic Languages and Literatures.

Interdisciplinary Research Paper

Students in CLAS certificate programs must complete a research paper on Latin America that reflects competence in at least two disciplines. The master's thesis or a revised research paper may be used to fulfill this requirement.

Center for Russian and Eastern European Studies

Contact Information

Graduate Advisor: Andrew Behrendt
Associate Director
Center for Russian and Eastern European Studies
4402 Wesley W. Posvar Hall
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aeb72@pitt.edu
www.ucis.pitt.edu/crees

Established in 1965, the Center for Russian and Eastern European Studies (REES) at the University of Pittsburgh is designated by the U.S. Department of Education for Title VI funding as a National Resource Center.

There are three broad focus areas for the research conducted by faculty and graduate student specialists in the REES program. They are (1) contemporary Russian, East European, and Eurasian cultures, (2) politics, economics, and societies of Russia, Eastern Europe, and Eurasia (3) foreign policy issues as they relate to the REES world area.
The Center for Russian and East European Studies offers graduate certificates in East European Studies, Russian Studies, or Soviet Studies to students who successfully combine second language expertise and multidisciplinary area-focused courses.

Admission Information

Application for admission to graduate study is made directly to the academic department or graduate/professional school of the student's choice. The applicant should include a statement requesting admission to the REES certificate program.

To enroll in one of the certificate programs, admitted students should make an appointment with the REES graduate advisor as soon as possible after their arrival at the University.

Financial Assistance

The Center for Russian and East European Studies offers several means of financial assistance to students in its certificate program. Please visit http://www.ucis.pitt.edu/main/scholarships for further details.

Russian and East European Studies Certificate

Contact Information
Center for Russian and Eastern European Studies
4402 Wesley W. Posvar Hall
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reesadv@pitt.edu
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Overview

REES is one of a select few National Resource Centers for Russian and East European Studies funded by the US Department of Education. REES has 68 affiliated faculty members, and has programs with 14 Arts and Sciences departments and five professional schools. Our many areas of focus include subjects such as the transformations of post-communist societies, history, foreign policy and international relations, anthropology, music, and contemporary culture and literatures. Recognizing that regional boundaries are constantly contested and redefined, our geographic scope includes Russia, Ukraine, Belarus, the Baltic states, Central Asia and the Caucasus, the Western Balkans, Poland, Hungary, Slovakia, Czech Republic, Romania, Bulgaria, Moldova, Mongolia and Turkey. REES currently offers Certificates in Advanced Russian and East European Studies, Russian Studies, or Soviet Studies, which may be earned in conjunction with most masters and doctoral programs in the School of Arts and Sciences and a number of professional schools.

Requirements for REES Certificates

The requirements for each of the REES graduate certificates are as follows:

- Completion of **six approved Russian and Eastern European area studies courses**, including four courses from at least two departments other than the student's home department, for a total of 18 credits.
- Graduate students should complete a minimum of **6 unique credits of coursework**. In other words, at least 6 credits of the course work used to complete the requirements of any graduate level certificate in UCIS must be in addition to the credits used to complete the student's primary degree program. In consultation with the academic advisor, students may fulfill these standards through one of the following options:
  - Students may contextualize non-credit bearing internships that are required in various graduate degree programs as credit bearing experiences for UCIS certificate programs. Prior approval must be received from the academic advisor to pursue this option.
  - Students who can add content courses without affecting their tuition bill will be encouraged to do so.
  - Students who are exempt from the language requirement because of previous coursework or heritage language skills may use language course credits towards the requirement for "additional work beyond the graduate degree.
- The 6 credits may be comprised of the following combinations:
- Two language courses (* see notes below)
- A language course (* see notes below) and a content course
- Two content courses
* Language courses may be used in the following circumstances:

For certificate programs that require three years of language proficiency, students may count language courses in the third year (i.e. grammar, conversation, courses taught in target language) that are above the intermediate level.

For students in any certificate program who are exempt from the language requirement due to previous coursework or as a heritage speaker, the introductory courses in a second language (either LCTLs, or a commonly taught language with a clear and stated relevance to their research or professional goals) will count.

For students completing two graduate level UCIS certificates, at least nine (9) credits of the course work used to complete the certificate requirements must be in addition to the credits used to complete the student's primary degree program. At least 3 of these credits must be in content coursework. All 9 cannot be language course credits.

- Demonstration of language proficiency equivalent to three years of college-level study in a language of the former Soviet Union (plus Mongolia) or Eastern Europe (including Turkish).
- Completion of a research paper of at least 15 pages in length, based substantially on primary sources in one or more languages of the REES world area.
- Students must maintain a minimum GPA of 3.0 in REES-related coursework.
Special Academic Opportunities

Special academic opportunities provide students with ways to augment their education and experience with expanded study programs both on and off campus, in both university and professional settings.

Area of Concentration (subplans) and Minors (plans)

Some graduate programs may include approved areas of concentration or minors. Areas of concentration define and describe the student's training and expertise within the broader discipline. Minors represent significant course work completed in an area related to the student's specialty. A graduate minor offered by the faculty at the Pittsburgh campus is available to any graduate student enrolled in an academic degree program on the campus provided that the school from which the student is graduating recognizes this minor. See the Schools, Departments, and Programs section of this bulletin for available areas of concentration and minors.

Certificate Programs

Students may enrich their educational experience by electing to take an academic interdisciplinary certificate program in the areas listed at the start of the Schools, Departments, and Programs section of this bulletin.

A certificate program at the graduate level is a coherent set of courses and related work in a particular area. Most certificate programs require a minimum of 15 credits, of which 12 credits must be earned at the University of Pittsburgh. The certificate may appear on the transcript as a degree goal and will appear on the final transcript as an awarded certificate.

A student must be formally admitted into a certificate program. The requirements for each certificate vary and students should contact the certificate program director.

Cross-Registration

Carnegie Mellon University, Duquesne University, the Pittsburgh Theological Seminary, Robert Morris University, and the University of Pittsburgh offer graduate students the opportunity for cross-registration in graduate programs in the five institutions in the fall and spring terms. See Cross-Registration in the Registration section of this bulletin for further details.

Two Independent Degree Programs Simultaneously

Students may pursue two independent graduate degrees simultaneously in two different schools within the University (joint degree) or two different departments within the same school (dual degree). Students desiring to enroll in two degree programs must have approval from both program faculties and their respective deans, must be admitted into both programs, and must satisfy the degree requirements of both programs. Students are billed at the tuition rate of the primary academic program. Normally, such students should be enrolled for no more than a total of 15 credits per term.
Course Information

Please note, when searching courses by Catalog Number, an asterisk (*) can be used to return mass results. For instance a Catalog Number search of " 1* " can be entered, returning all 1000-level courses.

ADMPS 1001 - SOCIAL FOUNDATIONS OF EDUCATION

Minimum Credits: 3  
Maximum Credits: 3  
Students in the course have the opportunity to develop a foundational understanding of the dynamics of schooling in society by addressing the cultural aspects that underlie society's educational ideas and practices. Through an interdisciplinary approach, readings and activities are designed for school practitioners, or those contemplating careers in education, to engage in the study of those cultural aspects and consequences. The general intent of foundational study is to introduce students to interpretive uses of knowledge Germane to education and to establish a basis for lifelong learning through normative and critical reflection on education within its historical philosophical, cultural and social contexts. Special emphasis is focused on the role of schooling in cultivating the habits necessary for democratic citizenship which include ongoing efforts to secure equitable and just social relations, and to advance the common good.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

ADMJ 0100 - SOCIETY AND THE LAW

Minimum Credits: 3  
Maximum Credits: 3  
Every society regulates behavior and the means, i.e., either informal or formal, with which this is done varies according to level of social development. This course examines the regulation of behavior in primitive, transitional, and modern societies and traces the development of law and legal systems and their relationship to different characteristics of social development. We will examine legal jurisprudence and the application of the principles of these philosophies and explore how they have shaped legal action.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ADMJ 0500 - INTRODUCTION TO ADMINISTRATION OF JUSTICE

Minimum Credits: 3  
Maximum Credits: 3  
Introductory course designed to provide the student with basic information on the criminal justice system. Views the criminal justice system as consisting of six sub-systems; police, prosecution, courts, corrections, probation and parole. Explores law and society in general, the history, structure, function and contemporary problems in each major sub-system. Also explores the trend of the criminal justice system and the directions and implications involved.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ADMJ 0600 - INTRODUCTION TO CRIMINOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course provides an overview of the study of the causes and social responses to crime. It examines legal definitions and elements of crime; surveys major categories of crime, i.e., Predatory and non-predatory acts; reviews major measures of crime; identifies major correlates and theories of crime; differentiates types of offenders and evaluates the working of the criminal justice system.

Academic Career: Undergraduate

1241
ADMJ 1100 - CRIME SCENE INVESTIGATION

Minimum Credits: 3
Maximum Credits: 3
This course provides students with an overview of crime scene investigative issues and problems, as well as techniques used in the collection, preservation, analysis, and utilization of physical and testimonial evidence in criminal prosecutions. Topics include forensic photography, crime scene collection equipment, canvassing, and interrogation techniques in investigations of robbery, burglary, assault, and homicide crimes.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ADMJ 1115 - CRIMINALISTICS

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the scientific tools of analysis of crime scene evidence. Topics include toxicology, hair, fiber, blood, DNA, fingerprint, and firearms analysis, as well as cause of death issues such as sexual homicides, suicides, and assisted suicides, drug and carbon monoxide poisoning, accidental deaths, and blunt force trauma deaths. The class consists of integrated lecture and lab each week. The laboratory activities require only basic calculations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ADMJ 1118 - CRIMINALISTICS LAB

Minimum Credits: 1
Maximum Credits: 1
This is an optional lab for students enrolled in administration of justice 1115. Designed for non-science majors, the lab will introduce students to the basic principles of chemistry, biology, and physics as they are used on a daily basis in criminal investigations. Topics include: identification of hair and fibers, DNA, and chromatography. These and other techniques are then applied to a simulated drug bust, a kidnapping case, and a suicide/homicide investigation.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: ADMJ 1115

ADMJ 1200 - INTRODUCTION TO LAW ENFORCEMENT

Minimum Credits: 3
Maximum Credits: 3
Introduces various historical and philosophical approaches to law enforcement. Course explores origins of policing; philosophical positions on nature of law enforcement and its justification; comparisons of various types of policing in different historical epoch; and emergence of bureaucratized urban force. Topics include development of law enforcement from ancient times with emphasis on philosophical approaches to policing in U.S.; introduction to constitutional issues and problems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ADMJ 1205 - INTRODUCTION POLICE MANAGEMENT
This course focuses on the management of police organizations. Topics include the evolving community expectations, alternative organizational models, recruitment, training and education, performance evaluations, technology and communications, research and planning, internal and external police accountability, and police culture and ethics.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**ADMJ 1210 - JUVENILE DELINQUENCY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Provides an overview of the field of juvenile delinquency. Topics covered include theories and research on causes of juvenile delinquency; law enforcement practices encountered in attempts to control delinquency; juvenile treatment under law; correctional philosophy and practices in juvenile justice; and impacts of juvenile criminality upon the rest of society. Students emerge from the course with knowledge of causes, prevention, treatment, and control of juvenile delinquency and should be prepared to move into more detailed study of this subject.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ADMJ 1220 - DEVIANCE AND THE LAW**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will examine the concept of deviant behavior and how departing from socially acceptable norms in legal, social and institutional settings sparks certain emotional reactions from those who encounter or experience it. The course will also, identify what is deviancy, types of deviant behavior, who engages in it, what causes it and how in certain circumstances it violates the law by considering the characteristics of the deviant person from both a socio-cultural and historical perspective. In addition, it will outline various theories to deviant behavior.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ADMJ 1225 - THE JUVENILE JUSTICE PROCESS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Presentation, discussion and analysis of the nature of the juvenile justice process, legal steps required in processing juveniles, nature and operation of juvenile justice institutions, interrelationships between parts of the system, and problems and prospects for their solution.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ADMJ 1230 - WHITE COLLAR CRIME**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines the meaning, varieties, and extent of "white collar crime" in America. It investigates the developmental history of this concept, theories of white collar crime causation, specific types of white collar crime, empirical and theoretical controversies surrounding white collar crime, and the probable future directions for this type of criminal behavior.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
ADMJ 1234 - INTRODUCTION TO CYBERCRIME

Minimum Credits: 3  
Maximum Credits: 3  
Traditionally, crime has taken place in the physical world. Since the dawn of the internet, criminal activities on the web have been continually increasing. Crime is no longer restricted to a town, city, state or even country as the internet crime transcends all different types of jurisdictions.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ADMJ 1235 - ORGANIZED CRIME

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to examine the history of organized crime not only within the United States, but from an international perspective as well. The emergence of "non-traditional" groups which are competing for power and profits will be examined, as well as the alliances between various criminal groups that have evolved, resulting in the phenomenon of "transnational" organized crime. Those "non-traditional" groups include, but are not necessarily limited to, domestic and international terrorist organizations, the reasons for their development as well as the perceived risk to American citizens both in a domestic environment and abroad. Neither organized crime nor a terrorist organization can be effectively discussed without integrating the evolution of US drug policy, which will be included. Finally, the various government tactics implemented to counter the threats mentioned herein as well as the impact on the private sector will be integrated into lectures throughout the program.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ADMJ 1236 - INTERNATIONAL ORGANIZED CRIME

Minimum Credits: 3  
Maximum Credits: 3  
Organized crime is no longer confined to a few countries such as Italy, the United States, and Japan. During the 1980s and 1990s it has become much more pervasive, and has had a major impact in countries in transition; turkey, Mexico, and South Africa. This course looks at the dynamics of organized crime, explains why it develops in particular countries, the various forms it takes, and the responses of law enforcement agencies and international institutions.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

ADMJ 1238 - CYBER SECURITY, LAW, AND MONEY LAUNDERING

Minimum Credits: 3  
Maximum Credits: 3  
This course will examine the scope of cyber-crime and its impact on today's system of criminal justice. Similarly, the vulnerabilities to cyber-assault will be examined. Topics include the use of computer technology to commit crimes such as "hacking" and other computer based criminology, as well as means of committing more traditional violations of law. Also included will be an analysis of the legal considerations facing law enforcement and other cyber-security professionals who are tasked with meeting the challenges of discovering, investigating and prosecuting cyber-crimes. Since our economy and security enterprises are so dependent on the electronic dissemination of information, effective measures to secure this vital resource will be explored. Given the fact that funds are transferred electronically, the electronic transmission of finances will be examined as well as the more basic methods of raising funds and laundering same to advance terrorist activities throughout the world.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ADMJ 1242 - GENDER, RACE, CLASS, AND CRIME
Gender, race and class are overlapping categories of experience that affect all aspects of life. There is perhaps no other context in which the effects of gender, race and class are as acutely evident as in the criminal justice system. That is, the people who are processed through the criminal justice system are disproportionately male, nonwhite, and from the lower classes. This class is designed to examine the cumulative and interlocking effects of gender, race, and class on crime.

**ADMJ 1245 - TERRORISM**

Minimum Credits: 3  
Maximum Credits: 3

This course focuses upon the social, political, economic and philosophical reasons for the development and spread of terrorism throughout the world, and examines potential dangers inherent in these practices and possible means of solutions to them. Special attention will be given each term to domestic and international acts of terror that affect American citizens, interests, and policies.

**ADMJ 1246 - FINANCING TERRORISM**

Minimum Credits: 3  
Maximum Credits: 3

The purpose of this course is to provide the student with an understanding of how terrorists and insurgents fund their activities and finance their operations. The course analyzes the relationship between states and non-state actors, U.S. And international responses to terrorist financing, and anti-terror strategies. Selected topics include the political economy of terrorism financing, the ‘HAWALA’ system, various mechanisms and policy dilemmas associated with terrorism financing, warning indicators, and terrorist organizations' vulnerabilities and inefficiencies.

**ADMJ 1260 - RESOURCE PROTECTION PLANNING**

Minimum Credits: 3  
Maximum Credits: 3

This course will enable students to build on the preventive nature of thorough resources protection planning and develop policies, programs, and procedures to minimize the impacts of severely detrimental events or activities. Acts of terror, the flu pandemic, natural disasters, and major crime incidents are some of the critical incidents facing public safety and private sector security personnel today. This course will provide students with an overview and understanding into the importance of preparation, planning, training, and response to critical incident when protective and preventive measures fail. It will also cover public and media issues and coordination between not only government agencies, but between public and private sectors as well. The course is highlighted by an off-site mock scenario utilizing a model city and a "hands on" response to a critical incident. Completion of the course will include a certification by FEMA’S emergency management institute in an on-line course available for state and local officials and responders.

**ADMJ 1265 - ADVANCED TOPICS IN CRIMINOLOGY**

Minimum Credits: 3  
Maximum Credits: 3

This course is an advanced course that examines specific and controversial issues related to crime and the criminal justice system. While the exact
topics change from year to year, those that have been studied include: the death penalty, mandatory sentencing, jail and prison overcrowding, victims' rights, and white collar crime.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**ADMJ 1300 - INTRODUCTION TO CORRECTIONS**

Minimum Credits: 3  
Maximum Credits: 3

Introduces various historical and philosophical approaches to corrections. Course explores origins of correctional institutions and evolution of correctional practices in contemporary society. Emphasis on modifications of institutional practices in contemporary society and development of new strategies as alternatives to incarceration. Various methodologies applicable to homogeneous and heterogeneous population groupings of offenders are examined taking into account individual characteristics and differences.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**ADMJ 1350 - PROBATION AND PAROLE**

Minimum Credits: 3  
Maximum Credits: 3

Presents and evaluates the nature and impact of probation and parole, research on effects of both, and strategies for their most effective use. The course examines the nature of parole; factors affecting grant of denial or probation; structure and operation of probation services; differences between juvenile and adult probation services; and impacts of probation and parole upon both the criminal justice system and larger society.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**ADMJ 1400 - INTRODUCTION TO CRIMINAL LAW**

Minimum Credits: 3  
Maximum Credits: 3

Acquaints the student with basic principles of criminal law derived from our English common law heritage and from more recent statutory penal code revisions in the American states. Course examines the meaning of crime and of criminal complicity and conspiracy; sentencing alternatives; and the decriminalization of some crimes.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**ADMJ 1410 - INTRODUCTION TO CRIMINAL PROCEDURE**

Minimum Credits: 3  
Maximum Credits: 3

This course examines the procedural effects of criminal law, including constitutional rights, state criminal procedure, and appellate decisions and rules.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**ADMJ 1425 - PRINCIPLES OF HOMELAND SECURITY**

Minimum Credits: 3  
Maximum Credits: 3
This course examines the new problems facing our domestic public service and justice personnel -- the borderless world of globalization and technology. Attention is paid to problems of terrorism, incident management systems, violence incident response procedures, planning for violence, changing federal, state, and local roles and response planning, weapons of mass effects, mass casualty programs, crime scene operations, technology and emergency responses, the evolving role of the intelligence community, and government, private, and non-government security issues.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ADMJ 1450 - CRITICAL ISSUES IN CRIMINAL JUSTICE**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Analyze contemporary issues relating to policies, goals, and procedures of all criminal justice agencies. Topics covered include trends and controversies regarding law enforcement activities, the changing role of police, police court controversies, standards and goals, future trends in criminal justice, manpower utilization, organizational changes, long-range planning, and projections for future of police agencies.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ADMJ 1900 - PRESERVICE INTERNSHIP**

- **Minimum Credits:** 1  
- **Maximum Credits:** 6  
This course is a supervised placement with specific agencies in the criminal justice system.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Satisfactory/No Credit

**ADMJ 1901 - INDEPENDENT STUDY**

- **Minimum Credits:** 1  
- **Maximum Credits:** 6  
Allows advanced students to pursue topics and research of special interest which are not otherwise available.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**AFRCNA 0025 - YORUBA 1**

- **Minimum Credits:** 4  
- **Maximum Credits:** 4  
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**AFRCNA 0026 - YORUBA 2**

- **Minimum Credits:** 4  
- **Maximum Credits:** 4  
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language. To recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations
with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### AFRCNA 0031 - INTRODUCTION TO AFRICANA STUDIES

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is a survey course for Africana studies. An Afrocentric approach will be used to review the eight basic subject areas of the multidisciplinary focus; black history, black religion, black creative productions, black politics, black economics, black social organizations, black psychology and black education. Two alternative views will be pursued; a theoretical review of the literature and a summation of the practical experiences of black life.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### AFRCNA 0032 - YORUBA 3

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### AFRCNA 0033 - YORUBA 4

**Minimum Credits:** 3  
**Maximum Credits:** 3  
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### AFRCNA 0120 - AFRICAN AMERICAN EXPERIENCE SPORTS

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines blacks in sports. It focuses on sport as a microcosm of the larger society and also addresses sport's relationship to politics, economics, race relations, and South African apartheid. It looks at the history of blacks in sports as well as three aspects of sports that appear to be racially biased; position allocation, performance differentials, and rewards and authority structure.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### AFRCNA 0127 - INTRODUCTION TO AFRICA

**Minimum Credits:** 3  
**Maximum Credits:** 3
Multidisciplinary introduction to Africa emphasizing the richness, diversity and dynamism of the African experience and presented through lecture discussions of culture, social structure, history, economy, politics and other aspects of Africa's development.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 0150 - AFRICAN AMERICAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Introduction to black American literature from its oral traditions to the written form from the 18th to 20th century interrelated to historical social and political movements. Special emphasis will be placed upon the Harlem Renaissance period, the literature of the 1960's, and a work by the Pulitzer Prize winners (Gwendolyn Brooks, James Alan McPherson, Alice Walker, or Toni Morrison).
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 0212 - WEST AFRICAN DANCE

Minimum Credits: 3
Maximum Credits: 3
To pursue at an introductory level specific ethnic dance forms of West Africa.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 0242 - AFRICANA URBAN WOMAN

Minimum Credits: 3
Maximum Credits: 3
Writings by African and Afro-American women writers reveal similar problems inherent in a move from a rural to an urban setting. A look at how the women characters adjust to loneliness, economic, educational, and cultural changes, and the quest for self-fulfillment is to be discussed within the context of the literary works.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 0311 - INTRODUCTION TO THE AFRICAN AMERICAN FAMILY

Minimum Credits: 3
Maximum Credits: 3
This course has 2 objectives: (1) it seeks to describe and analyze the organization of black families in American society and changes in them over time, and (2) it brings together the scholarly sources available to students of black families to assess the contribution each makes to a more theoretically and conceptually sophisticated description of the structure and interaction in black families.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 0313 - THE BLACK CHURCH

Minimum Credits: 3
Maximum Credits: 3
An introduction to the course and historical development of the black church in America, its contribution to the social and religious progress of black people, black leadership, and struggles including the civil rights movement, black theology and other social movements.
AFRCNA 0316 - INTRODUCTION AFRICAN AMERICAN THEATER

Minimum Credits: 3
Maximum Credits: 3
This course leads the student thru the social and historical development of black theater in North America from pre-Civil War to the present. It traces this development thru the writers, performers, companies, institutions and social movements which helped to shape the theater movements. The ultimate goal is to arrive at the understanding and appreciation that black theater is a testament to the life and vitality of a people.

AFRCNA 0318 - HISTORY OF AFRICA BEFORE 1800

Minimum Credits: 3
Maximum Credits: 3
Surveys history of Africa from earliest times to eve of European colonization. Looks at Africa from the inside out and aims at promoting an appreciation of Africa's contribution to world civilization and an understanding of the historical processes that have shaped modern Africa. Major themes and topics include the ancient kingdoms, Islam, the slave trade and the European contact.

AFRCNA 0352 - AFRICAN AMERICAN DANCE

Minimum Credits: 3
Maximum Credits: 3
An introduction to African-American dance influence of West Africa and the Caribbean upon the black American experience in a comparative and historical perspective. These two perspectives are based upon those devised by African-American dance artists, such as Katherine Dunham, Alvin Ailey and Bob Johnson. The physical component of African-American dance emphasizes body placement and the relationship of movement to its music.

AFRCNA 0385 - CARIBBEAN HISTORY

Minimum Credits: 3
Maximum Credits: 3
Examines historical roots of modern Caribbean. Examines major historical developments from period of subjugation of indigenous population through era of slavery to rise of modern nationalism and impact of American intervention. Also analyzes related socioeconomic systems and institutions. Selected country case studies included.

AFRCNA 0434 - PSYCHOLOGICAL EXPERIENCE AFRICAN AMERICAN FEMALE

Minimum Credits: 3
Maximum Credits: 3
The course examines black female behavior from both psych historical and contemporary perspectives. The model for classroom interaction consists
of lecture and group discussions by presenting relevant information and/or conducting specific exercises.

**AFRCNA 0454 - MAN/WOMAN LITERATURE**

Minimum Credits: 3
Maximum Credits: 3
Through prose and poetic works one will note how black men are viewed and characterized by female writers as well as how black women are treated by male writers. The basis for the difference lies in racial and sexual stereotyping in Afro-American literature.

**AFRCNA 0508 - SWAHILI LANGUAGE AND CULTURE IMMERSION**

Minimum Credits: 4
Maximum Credits: 4

**AFRCNA 0517 - INTRODUCTION TO AFRICAN AMERICAN POETRY**

Minimum Credits: 3
Maximum Credits: 3
This course introduces the student to an overview of the poetry by focusing on both male and female writers and their works that illuminate the Afro-American poetic tradition and those pivotal moments or transitions within the development of the tradition. The instructor recognizes that black female poetry especially, is a complex whole that can be analyzed in terms of style, structure and that it has a coherent history.

**AFRCNA 0520 - INTRODUCTION TO KISWAHILI LITERATURE**

Minimum Credits: 3
Maximum Credits: 3

**AFRCNA 0522 - INTRODUCTION TO AFRICAN LITERATURE**

Minimum Credits: 3
Maximum Credits: 3
This course will use a comparative approach to modern African creative writing in three major European languages; English, French, and Portuguese; bringing together writers from east, West, South and North Africa.

**AFRCNA 0523 - SWAHILI 1**
Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language. Its fundamental
sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the
opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 0524 - SWAHILI 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to
recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations
with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0501 or AFRCNA 0523 or SWAHIL 0101; MIN GRADE: 'C' FOR LISTED COURSES

AFRCNA 0525 - SWAHILI 3

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0502 or AFRCNA 0524 or SWAHIL 0102; MIN GRADE: 'C' FOR LISTED COURSES

AFRCNA 0526 - SWAHILI 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-
specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the
language through readings of various types. More complex writing tasks will be expected at this level.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0503 or AFRCNA 0525 or SWAHIL 0103; MIN GRADE: 'C' FOR LISTED COURSES

AFRCNA 0536 - 20TH CENTURY AFRICAN AMERICAN WOMAN HISTORY

Minimum Credits: 3
Maximum Credits: 3
Using both a chronological and topical format, this course will investigate the history, culture, and activism of African American women in the
twentieth century through readings of historical texts and articles, autobiography, and oral testimony. The content of the course includes an
exploration of the responses of African American women to racism, sexism, and class and color consciousness within different historical periods.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 0586 - EARLY AFRICAN CIVILIZATIONS
The course surveys the emergence and growth of early African civilization from the beginnings of the evolution of the human race to the eve of the European colonization of the continent. It introduces students to the multiple disciplines contributing to knowledge about early Africa, and shows the centrality of Africa and Africans for humanity in general. Among the principal themes that the readings and discussions focus on are: pre-history of Africa and the genesis of humankind; the complexity of migration, and state formation; and African and European earlier contact. A fundamental approach will be to look at Africa from the inside out and to analyze African societies from the perspective of their internal development and reaction to external influences. Its basic goal is to promote, first, an appreciation of Africa's contributions to world civilization.

**AFRCNA 0628 - AFRO-LATIN AMERICA**

Minimum Credits: 3  
Maximum Credits: 3  
A survey of black history in the countries of Latin America, from the period of European conquest (c. 1500) to the present.

**AFRCNA 0629 - AFRO-AMERICAN HISTORY 1**

Minimum Credits: 3  
Maximum Credits: 3  
This course surveys the history of Afro-Americans from their African origins to their emancipation during the Civil War.

**AFRCNA 0630 - AFRO-AMERICAN HISTORY 2**

Minimum Credits: 3  
Maximum Credits: 3  
This course surveys the development of black Americans from the time of the Civil War to the present.

**AFRCNA 0639 - HISTORY OF JAZZ**

Minimum Credits: 3  
Maximum Credits: 3  
The course focuses on the chronological development of jazz from its beginnings on the plantation to its present state as a world concert music. Various styles such as ragtime, blues, gospel, spirituals, rhythm and blues, rock, soul, etc., are examined.

**AFRCNA 0684 - RACE, CLASS, ETHNICITY: CARIBBEAN EXPERIENCE**

Minimum Credits: 3  
Maximum Credits: 3  
This course sets out to introduce students to developments: historical, political, cultural, social and economical in the area from the arrival of the
Spaniards in 1492 to the mordant bay revolt in 1865.

**AFRCNA 0787 - BLACK CONSCIOUSNESS**

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to the growing body of coherent cultural ideas and beliefs which provide a positive framework for study and interpretation of the black experience in North America. The course is pan-African in scope and context. One of the goals is to enable the student to view the African and the African-American struggles as part of the world struggle of human rights.

**AFRCNA 0805 - BLACK PERFORMANCE AESTHTICS**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**AFRCNA 1011 - THE RISE MODERN PAN-AFRICAN MOVEMENT**

Minimum Credits: 3  
Maximum Credits: 3  
This course will survey the current of pan-Africanist thought from the partitioning of Africa to the independence movements.

**AFRCNA 1012 - EARLY 20TH CENTURY BLACK SOCIAL MOVEMENT**

Minimum Credits: 3  
Maximum Credits: 3  
This course provides an understanding of the social, political cultural and economic context out of which black social movements developed. The main themes of the course concern migration, class differences, racism, and gender relations. The social movements the course examines includes, the Marcus Garvey movement, father divine, labor organization and the black women's club movement.

**AFRCNA 1021 - HISTORY OF THE AFRICAN DIASPORA**

Minimum Credits: 3  
Maximum Credits: 3  
History of the African diaspora focuses on the historical processes that have shaped, & continue to shape the peoples cultures of the African diaspora. It examines the triangle relationships between the African homeland & its American & European diaspora. Attention will be given to an understanding of the manifold circuits in the trans-Atlantic circulation of peoples, ideas & culture. The dynamism, complexity & global ramifications of the African diaspora will be revealed through discussions of important themes, including race, economic systems & construction of diaspora ID's.
AFRCNA 1024 - WEST AFRICAN CULTURES AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1026 - AFRICAN PRESENCE IN LATIN AMERICAN LIT/CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course is a chronological and topical introduction to afro-Latin American culture, making use of literary texts, historical documents, feature films, etc. It aims at providing students with a concrete frame of reference for the African presence in Latin America.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1030 - AFRICAN POLITICS

Minimum Credits: 3
Maximum Credits: 3
A general introduction to African politics at macro level for freshmen and sophomores with special focus on traditional African political system, European imperialism in Africa, African nationalism, independence and post-independence problems of nation-building and economic development.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1033 - AFRICAN AMERICANS AND MASS MEDIA

Minimum Credits: 3
Maximum Credits: 3
This course is a critical analysis of mass media content as it pertains to black Americans. The primary media are newspapers, radio, and television. For comparative purposes, media content related to children, other minorities, and women are used.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1039 - HISTORY OF CARIBBEAN SLAVERY

Minimum Credits: 3
Maximum Credits: 3
Today's sounds and tastes of the Caribbean from reggae and salsa music to dishes like mofongo and jerk chicken have deep historical roots in slavery. The Atlantic slave trade transported over four million Africans to the Caribbean – eight times the number that arrived in the United States. How did Africans and their descendants persevere under the colonial slave system? How does the legacy of slavery present itself in the 21st century? This course explores these questions by examining the Caribbean from the perspectives of enslaved women and men from the 17th through the 19th centuries, particularly in Cuba, Haiti, and Jamaica, and their contemporary manifestations in films, policies, and national identities.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
AFRCNA 1083 - SPECIAL TOPICS IN AFRICANA STUDIES

Minimum Credits: 3  
Maximum Credits: 3  
The study of a special topic in Africa studies. Content will vary from term to term, depending on instructor.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  

AFRCNA 1108 - AFRICAN AMERICAN FOLK CULTURE

Minimum Credits: 3  
Maximum Credits: 3  
This course will explore several aspects of African American folk culture being defined as non-elite expressions of art, music, dance, theatre, literature, humor, material culture, and religious beliefs. Particular attention will be given to the role of folklore in the perpetuation and transmission of shared cultural knowledge among blacks in the United States.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  

AFRCNA 1145 - AFRICAN AMERICAN RHETORIC

Minimum Credits: 3  
Maximum Credits: 3  
The purposes of this course are a historical-critical review of scholarship in black American rhetoric; and a theoretical-conceptual framework for the study of black American rhetoric. This course places considerable emphasis on the African roots of black American rhetoric, but the ultimate concern is with black Americans' behavior. The course covers consequences of African and European interactions in America, factors that forged the distinctive aspects of black American rhetoric, the effects of culture, racism, colonialism, and social class on communication.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  

AFRCNA 1150 - CONTEMPORARY AFRICAN AMERICAN WRITING

Minimum Credits: 3  
Maximum Credits: 3  
Writers in the period spanning the civil rights and black nationalist-humanist movements became a vanguard voice for black people. This course explores the written language of the period as an aid to the creation of student writings. As such, this course is a workshop and continuation of black creative writing on a higher level.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  

AFRCNA 1201 - GLOBAL DIASPORAS: CONTEMPORARY AFRICAN AND CARIBBEAN MIGRATION

Minimum Credits: 3  
Maximum Credits: 3  
What do Akon and Rihanna have in common? They are both part of recent diasporas from Africa and the Caribbean. This course focuses on the issues and experiences of people of African descent in contemporary (20th and 21st centuries) migratory diasporas from both Africa and the Caribbean. The course draws on extensive literature on migration, transnationalism, racial and ethnic identity formation, health, and other topics to illuminate the causes for migration and the experiences that migrants have in different host countries. What experiences do migrants from Africa and the Caribbean share? How do their experiences differ? How do migrants define themselves in new host countries? How do they stay connected to their homelands?  
Academic Career: Undergraduate
AFRCNA 1240 - AFRICAN LITERATURE AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
Inquiry into significant aspects of contemporary African social, political, cultural and human problems approached through the detailed study of representative African novels, plays and poetry written by African authors.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1245 - STUDIO IN AFRICAN AMERICAN POETRY AND POETICS

Minimum Credits: 3
Maximum Credits: 3
Intended for graduate students and advanced undergraduates, studio in African American poetry and poetics will be a course in interdisciplinary making, as we investigate the evolving fields of African American poetry and poetics through a critical and a creative lens
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1250 - BLACK EUROPE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

AFRCNA 1306 - WORLD LITERATURE IN ENGLISH

Minimum Credits: 3
Maximum Credits: 3
This course examines contemporary literature, primarily in English, written in eastern Europe, Africa, Latin America, etc. It pays particular attention to its depiction of social, political and moral concerns.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

AFRCNA 1309 - WOMEN OF AFRICAN AND AFRICAN DIASPORA

Minimum Credits: 3
Maximum Credits: 3
A cross-cultural study of women of African descent in West and southern Africa, the United States, Brazil, and the Caribbean.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1310 - CULTURES OF AFRICA
Minimum Credits: 3
Maximum Credits: 3
This course explores the traditional cultures and societies of Africa from prehistoric to modern times. Emphasis is on the conditions prior to contemporary changes but some attention is given to modern developments. Concern is with the variety of cultures on the continent. How people make a living. What family life is like? How disputes are settled, and religion. Through lectures, films, and readings, the student gets a feeling for life in this fascinating part of the world.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1330 - SCIENCE AND TECHNOLOGY IN AFRICANA CONTEXT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1334 - MUSIC IN AFRICA

Minimum Credits: 3
Maximum Credits: 3
The historical, social, and cultural background of music in Africa with particular reference to music in community life, performing groups, the training of musicians, instrumental, resources, structures in African music and the interrelations of music and dance. (Slides, films and recordings will be used to illustrate lectures.)
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1335 - AFRICAN-AMERICAN MUSIC IN THE UNITED STATES

Minimum Credits: 3
Maximum Credits: 3
This course is designed to familiarize the student with various phases of African-American music existing in North America; blues, gospel-spirituals, work songs, children's games songs, and classical compositions of ragtime composers Scott Joplin, J.P. Johnson, etc. Students will conduct field projects centered around "street recordings, locations, interviews of local and visiting artists, etc." A detailed study of great Pittsburgh performers present and past will constitute a major portion of this course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1347 - FRANCOPHONE AFRICANA LITERATURE

Minimum Credits: 3
Maximum Credits: 3
An examination of the cultural, social, and political relationships of French-speaking African and the Caribbean as reflected through different genres from the 1900's. Reading poetry, folklore, and novels produced by African writers sheds light on the issues confronting them such as polygamy, urbanization, assimilation, rituals, and the marginal man and woman.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1349 - CONTEMPORARY CARIBBEAN LITERATURE
Study the fiction, poetry, and drama of the English Caribbean in chronological order. Exile, liberation, autonomy, the female voice, cultural, and political identity will be examined in writing from Jamaica, Trinidad, Grenada, Antigua, and Guyana with recordings and films.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**AFRCNA 1353 - COMPARATIVE DANCE EXPRESSION**

Minimum Credits: 3
Maximum Credits: 3

This course will examine the cultural patterns of black dance styles and the similarities and differences in the motor behaviors among blacks in dance from South America, the Caribbean islands, Africa, and North America. Contents of the course will be introduced through films, lecture and videotapes.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis

**AFRCNA 1402 - LEARNING PARADIGMS AFRICAN AMERICAN CHILD DEVELOPMENT**

Minimum Credits: 3
Maximum Credits: 3

To examine systemic factors which affect the cultural, social, emotional, and cognitive development of black children.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis

**AFRCNA 1415 - RACE AND RELIGION**

Minimum Credits: 3
Maximum Credits: 3

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade

**AFRCNA 1420 - POWER AND PERFORMANCE IN AFRICA: FROM HIP-LIFE TO SOUKOUSS**

Minimum Credits: 3
Maximum Credits: 3

**Academic Career:** Undergraduate
**Course Component:** Seminar
**Grade Component:** Letter Grade

**AFRCNA 1425 - CARIBBEAN IDENTITIES**

Minimum Credits: 3
Maximum Credits: 3

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade

**AFRCNA 1450 - AFRICANA CULTURAL MEMORY**
AFRCNA 1510 - HEALTH IN THE AFRICAN DIASPORA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

AFRCNA 1522 - SEX AND RACISM

Minimum Credits: 3
Maximum Credits: 3
Sex and racism affords an opportunity to explore sex, sexism, and racism, to examine the historical development and economic impact of racism in America, to analyze the conceptual framework, the research methods, and approaches from which past and current studies on sex, sexism racism, have been and are being developed. The course will also explore sex and racism as a multi-dimensional continuum, and solutions to sex and racism.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1535 - DIMENSIONS OF RACISM

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

AFRCNA 1538 - HISTORY OF BLACK PITTSBURGH

Minimum Credits: 3
Maximum Credits: 3
This course will explore the role and experiences of black Pittsburghers over the past 200 years of the city's history.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1555 - AFRO CARIBBEAN DANCE

Minimum Credits: 3
Maximum Credits: 3
This course will focus on Katherine Dunham as an ethnologist and choreographer politically, socially, and aesthetically. The course discussion will clearly define the contents of Dunham's dance research and life experiences of Haiti.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

AFRCNA 1616 - AFRICAN AMERICAN WOMEN WRITERS
Minimum Credits: 3
Maximum Credits: 3
An inter-or-cross genre study of the African North American experience thru selected readings in novels, poetry, drama, short stories, and the essay (religious, secular and philosophical).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1644 - THE AFRICAN NOVEL

Minimum Credits: 3
Maximum Credits: 3
The novels studied will be drawn from several parts of the African continent and will all be available in English or translation. The emphasis will be on recurring themes in the works and on the influence of traditional African narrative forms.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1655 - AFRICAN CINEMAS/SCREEN GRIOTS

Minimum Credits: 3
Maximum Credits: 3
Ousmane Sembene, known as the father of African cinema, popularized the notion of the African director as the modern day griot (oral historian) and traditional storyteller. Therefore, this course is an introduction to a cross-section of post-independence films (1963-2004) as an art form and as a visual space on socio-political, economic and cultural topics by screen griots from Burkina Faso, Cameroon, and Chad, the Democratic Republic of Congo, Ethiopia, Niger, Nigeria, Senegal, South Africa and Zimbabwe.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

AFRCNA 1656 - HISTORY OF AFRICA SINCE 1800

Minimum Credits: 3
Maximum Credits: 3
Surveys history of Africa from 1800 to the present day. Major themes include African statecraft, European colonization, African nationalism and post-independence problems. Processes of African institutional growth within the perspectives of resiliency, change and adaptation will be emphasized.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1661 - POLITICAL ECONOMY OF AFRICA

Minimum Credits: 3
Maximum Credits: 3
An inquiry into the process of political and economic development in Africa from colonial domination to the present. Problems of economic dependence and integration into the global capitalist economic system are examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

AFRCNA 1704 - AFRICANA WORLD LITERATURE
Despite their geographical and cultural differences, writers from Africa, the Caribbean, and the United States undergo similar experiences of oppression. Problems of self-identity, and the quest for self-respect. These similarities will be discussed in class along with a comparative approach to the texts with supplementary films, slides, and recordings.

**AFRCNA 1710 - AFRICAN AMERICAN HEALTH ISSUES**

Minimum Credits: 3  
Maximum Credits: 3  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

Course will focus on black health issues from analytical, theoretical and practical perspectives. These perspectives will be introduced through cross-examination of health topics which are critical to the black population, the developing of health policies and conceptual models for health promotion and disease prevention.

**AFRCNA 1720 - WEST AFRICA IN THE ERA OF THE SLAVE TRADE**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**AFRCNA 1725 - SOCIAL AND HEALTH ISSUES IN EAST AFRICA**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

**AFRCNA 1760 - AFRICANA THEORY & METHODOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

**AFRCNA 1768 - AFRICANA SENIOR RESEARCH SEMINAR**

Minimum Credits: 3  
Maximum Credits: 3  
This course will assist the student in conducting a research project of her choice. The student will select a topic, write a proposal including the statement of a question or hypothesis, a list of the goals and objectives. A design of the methodology and a review of the relevant literature.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis
AFRCNA 1900 - INTERNSHIP

Minimum Credits: 1
Maximum Credits: 6
This course offers the student an opportunity to extend his/ her academic training to a practical work experience in the city of Pittsburgh.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

AFRCNA 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Students desiring to take an independent study should develop a typed proposal on a specific topic outlining the substance of the work, the objectives, the methodology, and the evaluation by which to determine when the objectives are met.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

AFRCNA 1902 - DIRECTED READING

Minimum Credits: 1
Maximum Credits: 6
This course introduces the students to a specific topic which is not normally taught in an Africana studies core course. It is an individual project administered under faculty supervision.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

AFRCNA 1903 - DIRECTED RESEARCH

Minimum Credits: 1
Maximum Credits: 6
This is an individual research project/course under the supervision of a faculty member. Theoretical and conceptual interest in the emerging discipline of Africana studies and the black experience offer students dynamic, creative and intellectual avenues into new areas for discovery.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

AFRCNA 1904 - REBELS AND REVOLUTION

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ASL 0101 - AMERICAN SIGN LANGUAGE 1

Minimum Credits: 4
Maximum Credits: 4
In this course, students are taught American sign language (ASL) vocabulary and grammatical structures. Students will also learn and ASL fingerspelling system, the use of gestural devices and how to appropriately use the signing space in ASL. Further, students will learn about deaf
culture in the United States. Out-of-class participation in deaf community events in required.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ASL 0102 - AMERICAN SIGN LANGUAGE 2**

- **Minimum Credits:** 4  
- **Maximum Credits:** 4  
- Students will learn more difficult vocabulary (signs) and how to use them in one-to-one, small group, and large group communication. Students will also be exposed to classifier constructions. This course is a continuation of ASL I (LING 0471) and it utilizes a similar curriculum.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0471 or ASL 0101; MIN GRADE: 'C'

**ASL 0103 - AMERICAN SIGN LANGUAGE 3**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This course continues the study of ASL. The students will work on developing intermediate communication skills and will concentrate on production skills. Linguistic and cultural features will be presented in the context of the language learning experiences. This level will also examine and discuss its use and effect on and in the deaf culture.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0472 or ASL 0102; MIN GRADE: 'C'

**ASL 0104 - AMERICAN SIGN LANGUAGE 4**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This advanced course of ASL concentrates on developing more precise skills and competencies by using appropriate variations of ASL (regional, racial/ethnic, stylistic and age related) vocabulary. Students will also be given the opportunity to use ASL by volunteering in the deaf community.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0473 or ASL 0103; MIN GRADE: 'C'

**ASL 0105 - AMERICAN SIGN LANGUAGE 5**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This course provides an opportunity for students to formally pursue work on an individual basis. This course also applies knowledge of American Sign Language (ASL) grammar and vocabulary to the description of increasingly complex constructs, processes and situations. Students will: incorporate multiple character role shifting into medium-length stories, narratives and the discussion of hypothetical issues; identify and discuss various controversial issues via debate and presentation; continue to analyze multiple meaning English words and English idioms to express concepts in ASL; have the opportunity to gain knowledge about the Deaf Community as a part of the human diversity including people of color, genders, LGBTQ people, people with disabilities, etc.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0474 or ASL 0104; MIN GRADE 'C' FOR ALL LISTED COURSES
ASL 0106 - AMERICAN SIGN LANGUAGE 6

Minimum Credits: 3
Maximum Credits: 3
Introduction to specific topics and content areas in ASL discourse, including Visual Gestural Communication, International, Deafblind, Mental Health/Medical/Sexual/Drugs/Other Special Topics in sign communication depending on the needs and interests of Pitt Students. This course also provides students with opportunities to expand expressive and receptive use of American Sign Language (ASL), including a variety of special topics at an advanced level. Special emphasis is on increasing spatial use, ASL fluency and non-manual grammar and behaviors. Skills related to research in sign language discourse will be introduced.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1727 or ASL 1909 or ASL 0105; MIN GRADE 'C' FOR ALL LISTED COURSES

ASL 1615 - DEAF CULTURE

Minimum Credits: 3
Maximum Credits: 3
Many deaf people in the U.S. Are united by a language (ASL) that differs from English and a culture with characteristics that differ from those of the larger hearing society. This culture is known as deaf culture, and students in this course will be introduced to various facets of American deaf culture through readings, videos, and discussions. Students will also explore other deaf cultures throughout the world. Among the course foci are: issues of accessibility, perspectives of deaf versus hearing individuals, and various examples of deaf literature.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0472 or ASL 0102 (MIN GRADE 'B'); CREQ: LING 0473 or ASL 0103 (MIN GRADE 'B'); PLAN: American Sign Language (ASL-CS1); LEVEL: Junior or Senior

ASL 1625 - THE DEAF AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
The culture of deaf Americans is distinct from that of mainstream American society. The primary focus of this course is to expose students to the culture of the deaf in the United States and around the world. In addition to teaching students how to interact with the deaf in a culturally appropriate way, the course will help them understand deaf culture as part of human diversity. Among the course foci are: issues of accessibility, perspectives of deaf versus hearing individuals, and various examples of deaf literature.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ASL 1635 - ANALYSES OF ASL LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course is designed for students to explore and analyze American sign language and American deaf culture through ASL literature. Studying ASL literature is a way to examine the linguistic complexity of ASL as well as explore the deaf community's values and traditions as a minority group and a group to which visual depiction of ideas is highly valued. This course is conducted in ASL.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0473 or ASL 0103 (MIN GRADE 'B'); CREQ: LING 0474 or ASL 0104 (MIN GRADE 'B') and (LING 1722 or ASL 1615) (MIN GRADE 'B') PLAN: American Sign Language

ASL 1705 - STRUCTURE OF SIGN LANGUAGES
This course will focus on the linguistic structure of sign languages, drawing examples principally, though not exclusively, from American sign language (ASL). It will also highlight similarities and differences between sign languages and spoken languages. In addition to structural features, the course will cover mechanisms unique to visual/spatial languages, the use of the face and body for grammatical signals, language variation, and acquisition of sign languages.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 1000 or CSD 1020

**ASL 1715 - STRUCTURE OF ASL AND ENGLISH**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0473 or ASL 0103 (MIN GRADE 'B') and (LING 1000 or CSD 1020); CREQ: LING 0474 (MIN GRADE: 'B'); PLAN: American Sign Language

**ASL 1725 - SOCIOLINGUISTICS OF SIGN LANGUAGE**

There are various sociolinguistic topics that one must consider with respect to signed languages of the deaf. Regarding language contact, ambient languages-either signed or spoken-influence a signed language. Less than 10% of deaf people are exposed to signed language from birth, which results in unique phenomena. Additionally, signed languages exhibit variation based on a myriad of social and geographical factors. These topics, in addition to language planning and language policy, will be addressed in this course.  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 1000 or CSD 1020

**ASL 1800 - INTRODUCTION TO ASL-ENGLISH INTERPRETING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ASL 1901 - INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 9  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**ASL 1905 - UNDERGRADUATE TEACHING ASSISTANT IN AMERICAN SIGN LANGUAGE**

**Minimum Credits:** 1  
**Maximum Credits:** 3
ASL 1909 - TOPICS IN SIGN LANGUAGE STUDIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 474 and 1722; PLAN: American Sign Language

ANTH 0112 - TOURISM

Minimum Credits: 3
Maximum Credits: 3
This is a course designed to introduce the students to the many facets of the world's largest industry, tourism. The approach is multidisciplinary focusing on such issues as work and leisure, tradition and modernity, growth and pollution, security and terrorism, privilege and servitude.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 0501 - ARCHEOLOGY: AN OVERVIEW

Minimum Credits: 3
Maximum Credits: 3
Designed for non-majors, this course presents a broad introduction to the goals and techniques of today's archeology through readings, videos, and short exercises. The course reviews global human prehistory from the earliest appearances of human ancestors some 4 million years ago through the development of the Ancient Egyptian, Mayan, Chinese, and Inca Civilizations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 0534 - PREHISTORIC FOUNDATIONS OF EUROPEAN CIVILIZATION

Minimum Credits: 3
Maximum Credits: 3
Neanderthals, ice-age art, Indo-European languages, Stonehenge, megaliths, Celts, and more; the major archeological discoveries, from the first traces of human occupation of European soil up to the early middle ages, will be covered through illustrated lectures, films, and perhaps museum visits. Course also offers a basic introduction to the discipline of archeology, thus serving as preparation for other courses in the subject; it also serves as a useful foundation for studies in history, ethnic history, art history, and classics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 0536 - MESOAMERICA BEFORE CORTEZ

Minimum Credits: 3
Maximum Credits: 3
When Cortez and his Spanish soldiers arrived in Mexico, they found Indians living in large cities with impressive temples raised on tall pyramids, lavish palaces for rulers, elaborate markets, and skilled craftsmen working in gold, copper, feathers, stone, pottery, and other materials. They were astonished at a civilization so like their own and yet so different (so "barbaric" to European eyes). This course explores the development of this civilization back to its roots several thousand years ago, by reconstructing earlier cultures known only from archeological evidence.
ANTH 0538 - THE ARCHEOLOGIST LOOKS AT DEATH

Minimum Credits: 3
Maximum Credits: 3
Pyramids, tombs, burial mounds, graves, skeletons, mummies; the stuff of gothic romance. But the way people disposed of their dead also tells us an amazing amount about life in the past. We will look at the wide range of burial practices in the world, including the "American way of death", and then concentrate on the physical remains themselves. What do burial practices indicate as to beliefs, rituals, religion and society?

ANTH 0582 - INTRODUCTION TO ARCHEOLOGY

Minimum Credits: 3
Maximum Credits: 3
Examines the nature of modern archaeological research. Lectures look at how archaeologists work in the field, their analytic techniques, and some of the principal methodological and theoretical problems facing the field. Specific examples are used to illustrate these topics.

ANTH 0601 - PHYSICAL ANTHROPOLOGY: OVERVIEW

Minimum Credits: 3
Maximum Credits: 3
Designed for undergraduate non-majors, this course will provide a basic introduction to the issues, theories, and methods of physical anthropology. Beginning with a consideration of evolutionary, genetic and geologic principles, the course goes on to consider the diversity of fossil and extant primates, including humans. Issues in anatomy, paleontology and behavior will all be addressed.

ANTH 0620 - BIOCULTURAL ANTHROPOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to general anthropology emphasizing the interaction of human biology and behavior. The course considers what it means to be human by examining the biocultural interface of both present and past human populations. Topics of discussion will include human adaptation to extreme environments, cross-cultural variations in infant sensorimotor development and biological and cultural diversity in general. An understanding and appreciation of the how's and why's of human biological and cultural variation will be stressed.

ANTH 0630 - FORENSIC ANTHROPOLOGY: AN INTRODUCTION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
ANTH 0680 - INTRODUCTION TO PHYSICAL ANTHROPOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to introduce the undergraduate to the issues, theories and methods of physical anthropology. Beginning with a consideration of evolutionary, genetic and geologic principles, the course goes on to consider, the diversity of fossil and extant primates, including humans. Issues in anatomy, paleontology and behavior will all be addressed.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 0681 - INTRODUCTION TO HUMAN EVOLUTION

Minimum Credits: 3  
Maximum Credits: 3  
This is an introduction to human evolution and, in general, the evolution of the larger group to which we belong, the order primates. We will survey first the development of evolutionary ideas and modern developments in biology and geology and then review the diversity of living and fossil primates, dwelling especially on the discoveries and controversies surrounding our own evolutionary past.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 0701 - CULTURAL ANTHROPOLOGY: OVERVIEW

Minimum Credits: 3  
Maximum Credits: 3  
Designed for undergraduate non-majors, this course will provide a broad introduction to cultural anthropology. This course examines the behavior and customs of peoples throughout the world and considers what it means to be human. We will consider patterns of marriage, family organization, gender, political behavior, economic systems, rituals, etc., Of other peoples and compare these with American social patterns.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 0710 - SPECIAL TOPICS IN CULTURAL ANTHROPOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course will be on a topic in the area of specialization of a visiting scholar yet to be determined.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 0715 - ANTHROPOLOGY OF LATIN AMERICA

Minimum Credits: 3  
Maximum Credits: 3  
The purpose of this course is to offer students a basic yet comprehensive survey of the anthropology (including history, archeology and geography) of Latin America. This survey course will emphasize the development of Latin American societies and cultures since the European conquest, and focus on key issues/themes that have consistently surfaced in Latin American cultural anthropology and that have continuing priority, relevance and interest up to the present. This course is especially tailored to freshmen students with little or no knowledge of Latin America.

Academic Career: Undergraduate
ANTH 0717 - MAGIC, WITCHCRAFT AND THE SUPERNATURAL BODY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 0730 - HIMALAYAN GEOGRAPHY

The Himalayan region is characterized by a tremendous range of social and cultural diversity that corresponds to climatic, ecological and geographical variation, as well as local and regional geopolitical factors. Historical change from the emergence of early forms of social complexity centered on chiefs and their forts 'from which the regional designation of Garhwal' takes its name' through the development of kingdoms and larger polities shows the intimate link between geography, environment and socio-political transformation. Similarly, local language patterns, regional religious practices, musical styles, mythology, food culture, sartorial fashion, architectural design, agricultural and transportation technologies and engineering and trade networks have all been shaped by the structure of Muntain barriers, bounded valley communities and bracketed lines of communication that follow river systems. Whereas the political economy of the Himalayas has been structured around agricultural production, and the development of elaborate field terrace systems, there have also been subsidiary economies centered on trans-Himalayan trade and pilgrimage as well as pastoral nomadism and transhumance. Since the colonial period, the Himalayas have increasingly become a place for rest, relaxation, tourism and adventure, and this 'along with further political transformations since Indian independence' has led to the rapid development of urban areas. This course will provide a survey of Himalayan history, society and culture with a focus on the relationship among nature, the environment and geography.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 0768 - HUMAN SEXUALITY IN CROSS CULTURE

This course explores the expression of human sexuality across a diversity of cultural and social settings using a cross-cultural framework that is based on comparing information on sexuality in other cultures with data from us. It includes how human groups manage sexuality and reproduction; theories of the development of marriage, family, and household systems; differences in values and expectations related to sexuality; the development as sexual expression across the life span; understanding heterosexual and homosexual relationships; and understanding sexual violence.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 0780 - INTRODUCTION TO CULTURAL ANTHROPOLOGY

By examining the behavior and customs of peoples throughout the world, the course considers what it means to be human. We will describe the patterns of marriage, family organization, warfare and political behavior, economic systems, rituals, etc., Of other peoples, especially those of tribal societies, and compare these with American social patterns. Anthropological films and slide presentations will supplement lectures.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

1270
ANTH 1335 - GLOBALIZATION

Minimum Credits: 3
Maximum Credits: 3
This course provides an overview of the economic, social, technological, environmental, and ideological impacts of globalization on national communities, with an emphasis on the cultural and political dynamics of the process. Student research and oral presentation skills are emphasized.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1441 - FIELD METHODS IN LINGUISTICS

Minimum Credits: 3
Maximum Credits: 4
This course is meant to simulate the experience of linguistic field work, and raise awareness about the effectiveness of specific interview techniques for acquiring linguistic data. The course will give instruction and experience in eliciting data from a speaker of non (indo) European language. Students will undertake the investigation of the phonology, some aspect of grammar, and the ethnosemantic study of a taxonomically structured semantic field such as plants or animals. Students will make detailed elicitation plans in advance of their administration.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: LING 1578 and 1773 and 1777; LVL: Sr

ANTH 1447 - LANGUAGE, CULTURE, AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
Certain cultural concerns are well-labelled linguistically: kinship, plant-names, diseases, colors, etc. The study of how such semantic fields are labelled and organized is ethnosemantics. Much of the way language is used depends on the context of speaking. Different ways of talking to different people is the subject matter of sociolinguistics. Some thoughts that we habitually think seem illogical on reflection, but it seems as if our language predisposes us to think this way. Such phenomena are addressed by the Sapir-Whorf hypothesis.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1450 - GENDER AND SUSTAINABILITY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ANTH 1516 - SPECIAL TOPICS IN ARCHAEOLOGY GEOPHYSICS

Minimum Credits: 1
Maximum Credits: 1
This course provides a general introduction to common methods of geophysical prospection being used within archaeology. Classroom lectures will be provided on: (i) integration of geophysics as a tool within broader research programs, (ii) background theory on the methods and their use in field research (fluxgate gradiometry, earth resistance, gpr, magnetic susceptibility, electrical conductivity), and (iii) opportunity to process and interpret actual geophysics datasets. Hands-on training in geophysics survey also will be provided through practical field sessions including: fluxgate gradiometry, earth resistance, and magnetic susceptibility.
Academic Career: Undergraduate
ANTH 1520 - SEDIMENTOLOGY AND STRATIGRAPHY

Minimum Credits: 4
Maximum Credits: 4
The first part of this course involves the description of sedimentary particles and deposits using the fundamental properties (composition, size, shape, orientation and packing) and derived properties (porosity, permeability and sedimentary structures). Included is a discussion of the processes related to these properties. The second part reviews modern sedimentary environments and their rock products. Finally, principles of stratigraphy are introduced.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GEOL 0055

ANTH 1524 - CHINESE ARCHAEOLOGY

Minimum Credits: 3
Maximum Credits: 3
An introduction to Chinese Archeology from the earliest known beginnings through the Han Civilization of the second century A.D. Attention will be given to innovations of people in this part of the world -- the agricultural beginnings, the first cities and states, the formation of an empire. Emphasis will be placed on such topics as the role of archeology in the study of history and art as well as in understanding china today.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1525 - EASTERN NORTH AMERICAN ARCHEOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course deals with cultural development in the eastern United States from approximately 20,000 years ago to the period of European contact. Particular attention will be paid to man's adaptation to late pleistocene and holocene environments, the initial occupation of the region East of the Mississippi, the origins of agricultural systems and the rise of complex societies, including the Adena, Hopewell, and Mississippian manifestations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1526 - WESTERN NORTH AMERICAN ARCHEOLOGY

Minimum Credits: 3
Maximum Credits: 3
The prehistory of Western North America is examined in detail from the initial peopling of the area to the period of historic contact. Special emphasis is given to the Paleo-Indian and archaic techno/subsistence stages in the arid portions of the West.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1527 - ARCHAEOLOGY OF NORTH AMERICAN INDIANS

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
ANTH 1528 - SOUTH AMERICAN ARCHAEOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course deals with cultural development in South America from 20,000 B.C. To Spanish contact. Emphasis will be placed on the earliest evidence for man, maritime adaptations, and origins of agriculture, rise of the state in the Central Andes and the rise of complex societies in the tropical forest. Stress will be placed on the evolution of Andean states including the origins and spread of the Chavin, Moche, Nasca, Tiahuanco, Chimú and Inca Empires.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1530 - ORIGINS OF CITIES

Minimum Credits: 3  
Maximum Credits: 3  
A broad introduction to the process of urbanism and the rise of early pre-industrial cities in both the new and old worlds. Specific cases from Mesoamerica, the Andes, North America, Egypt, and the near East are examined in order to elucidate the varying roles cities played in ancient civilizations.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1534 - ARCHEOLOGICAL DATA ANALYSIS 1

Minimum Credits: 4  
Maximum Credits: 4  
An introduction to quantitative data analysis in archeology, this course covers basic principles of statistics, including exploratory analysis of batches, sampling, significance, t tests, analysis of variance, regression, chi-square, and estimating universe means and proportions from samples. The approach is practical, concentrating on understanding these principles so as to put them to work effectively in analyzing archeological data. Much of the statistical work is done by computer.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1535 - BASIC ARCHEOLOGICAL FIELD TRAINING

Minimum Credits: 6  
Maximum Credits: 6  
The university of Pittsburgh field training program in archaeology is conducted at various locations. Features of the excavations include basic training in mapping, archaeological survey, excavation methods, soil analysis, data recording, and preliminary artifact analysis.

Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

ANTH 1536 - PALEO-KITCHEN: PREHISTORIC DIET, COOKING AND DOMESTICITY

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 1537 - BASIC LABORATORY ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
This is a follow-up course for anthropology 1534 basic field methods in archaeology. In anthropology 1537, students who have participated in the summer field training program will be instructed in the Methodology of Artefactual and Non-Artifactual analysis. All data recovered during the summer field training program will be processed by the students under the supervision and direction of the instructor. Special emphasis will be placed on lithic and perishable analysis as well as paleo-climatic reconstruction and quantitative methods.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1540 - SPECIAL TOPICS IN ARCHEOLOGY

Minimum Credits: 3
Maximum Credits: 3
Topics covered vary greatly with instructor and term.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1541 - CULTURAL RESOURCE MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
This course will cover in an introductory way all aspects of cultural resource management and historic preservation. Major topics include federal historic preservation legislation, cultural resources (historic and prehistoric archaeology, historic structures), the national register of historic places, section 106 and 110 of the NHPA, historic preservation planning, and state historic preservation plans. Course will utilize historic architectural examples as well as prehistoric and historic archaeological sites. Greater emphasis placed on how to evaluate historic properties for national register.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 1543 - ANCIENT STATES IN THE NEW WORLD

Minimum Credits: 3
Maximum Credits: 3
Drawing on the fact that the ancient new world was a dazzling treasure house of non-Western political thought and organization, this course uses archaeology and ethnohistory to document and make comparative sense of the rich variety of political arrangements which existed among prehispanic states in MesoAmerica and Andean South America. A special aim is to understand how Amer-Indian concepts about state craft and rulership mesh with anthropological and other theories about ancient states.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 1544 - ANCIENT CIVILIZATIONS

Minimum Credits: 3
Maximum Credits: 3
This course examines the rise and fall of several ancient civilizations. It covers the archaeology and earliest history of regions recognized as significant independent centers for the development of early civilization: Mesopotamia, Egypt, Indus Valley, China, South East Asia, MesoAmerica,
and Andean South America. Central themes concern: why and how civilizations first emerge and then collapse; relationships among economic, political, social, and ideological factors in early civilizations; generic versus unique qualities of different early civilizations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**ANTH 1546 - CAVE MAN: ARCHAEOLOGY, POP CULTURE AND THE PRIMITIVE**

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

**ANTH 1547 - POTS AND PEOPLE**

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

**ANTH 1548 - AMAZONIAN ARTS: MAKING AND MEANING**

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

This course introduces students to the arts of the Amazonian region in the context of their function and meaning. The course will be taught as a combination of lecture and hands-on experience working with native potters from the Bobonaza river. Students will learn to make pottery in the Kichwa (Quichua) tradition, and to understand the role of pottery and material culture in the daily lives of people in this region. On a number of occasions, students will accompany the native potters on journeys into the adjacent forest to gather materials and to study the patterns in nature that inspire them. Here students will observe related arts such as face paint patterns, beaded ornaments, ritual singing and storytelling. Carefully selected readings and lectures will use these arts as a window for exploring Amazonian thinking about the natural world behind the designs, and the ways in which the designs can be used to understand patterns of social interaction. Interviews with potters will aid in understanding these arts in the context of daily and ceremonial life. In the process, the arts become a doorway allowing the student to explore Amazonian culture and environment first hand. Comparative material from several other world regions will also be discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**ANTH 1549 - WARFARE IN ARCHAEOLOGY AND ETHNOGRAPHY**

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**ANTH 1552 - A HISTORY OF ANTHROPOLOGICAL THOUGHT**

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
ANTH 1556 - ZOOARCHAEOLOGY

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade

ANTH 1557 - ARCHAEOLOGY OF RUSSIA, CENTRAL ASIA, AND MONGOLIA

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

ANTH 1600 - HUMAN EVOLUTION AND VARIATION

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1601 - STRUCTURE AND FUNCTION

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1602 - HUMAN SKELETAL ANALYSIS

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis

ANTH 1603 - HUMAN ORIGINS

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis
ANTH 1605 - PRIMATE ANATOMY

Minimum Credits: 4
Maximum Credits: 4
This course offers a detailed consideration of the anatomy of the primates. It will follow an integrated regional approach (i.e., The back, the upper extremities, the hand, etc.), However, the major focus will be on the musculoskeletal system. Students will dissect human material (cadavers) but emphasis will be on the comparative aspects within the order whenever possible. Other non-human primate skeletal material will also be used.

ANTH 1609 - ADVANCED SKELETAL ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
This course provides the student with an in-depth understanding of the skeletal features used to develop the osteobiographic profile (e.g., age, sex, stature, ancestry, handedness, etc.) Of an individual. This analysis is essential for forensic identification and forms the foundation for the reconstruction of ancient individuals and their life-ways. Each student will select some aspect of skeletal analysis and present an overview of the bone biology, the history of the analytical methods, the problems and advantages of each method, modifications that others have made to address these issues, and the current state of knowledge. In the past, some students have proposed new methods of analysis. This will be complemented by a lab exercise designed by the student that will provide data for interobserver analysis of various techniques. The results of this lab will be presented as posters which will be posted on CW at the end of the term. Prior osteological experience is required.

ANTH 1611 - EVOLUTIONARY THEORY

Minimum Credits: 3
Maximum Credits: 3
Intended as a sequel to ANTH 0011, this course explores modern evolutionary theory in detail. Some coverage is given to the history of debates, but more emphasis is placed on their current status. Both phylogenetic and adaptive components of the evolutionary process are discussed.

ANTH 1613 - PRIMATE BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course is a survey of the major groups of living primates (including humans) and of the various hard and soft tissue, as well as physiological and biochemical, systems that distinguish the group as primates and further distinguish the diverse lot of primate subgroups.

ANTH 1617 - PALEOPATHOLOGY
ANTH 1619 - SPECIAL TOPICS IN PHYSICAL ANTHROPOLOGY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1703 - THE HISTORY OF GOD

Minimum Credits: 3
Maximum Credits: 3
God has a history. In the earliest days of that history, God was worshiped as one of a plethora of deities controlling various spheres of cosmic activity or the human world. Students in this course will learn about this ancient pantheon - how gods functioned in society and how their presence was experienced by those devoted to them. They will then trace the evolution of the God of Israel from a mountaintop deity of the southern Levant in the late second millennium BCE to a supreme deity worshiped by a small group of absolute monotheists based in Jerusalem in the mid-first millennium BCE. Students will become more sophisticated readers of biblical texts in the process. The sources of the Hebrew Bible reflect not a homogeneous monotheism, but rather a diverse set of belief systems tending toward henotheism or even polytheism. By appropriating and reinterpreting the religious myths of their neighbors, the Israelites arrived at a character of the divine that has proven problematic to many contemporary theologians, particularly on issues of LGBT rights, women's rights, and the environment.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1704 - RITUAL: THEORIES AND CASES

Minimum Credits: 3
Maximum Credits: 3
This course deals rigorously with historical and contemporary topics in the study of ritual and its intersections with religion, politics, medicine, disaster studies, and the study of social relations in general. From being considered peripheral to social science, ritual has re-emerged as a fundamental category of human behavior, relevant across a wide span of domains of actions. While there is a close connection between ritual and religion, ritual action is important outside of the sphere of religion and is now considered fundamental to the workings of society. Students in this course will understand how ritual practices vary cross-culturally while serving basic functions. The course provides case studies from different areas and shows how theory applies to these cases. Instruction methods include lectures and discussion; student work includes presentations, essays, and exams.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ANTH 1708 - SOCIETY, CULTURE, AND POWER IN POST-CONQUEST CITIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
ANTH 1711 - ETHNOBIOLOGY: AMAZONIAN RELIGION AND NATURE

Minimum Credits: 3
Maximum Credits: 3

The course explores Amazonian cultural knowledge of plant and animal species, comparing it to scientific knowledge, to uncover underlying assumptions that constitute a systematic, if implicit, Amazonian philosophy of nature. It also teaches students how to ask key questions and to carry out qualitative research on ethnobiology. Over generations of hunting and gathering Amazonian cultures gained an intimate knowledge of their rainforest environment, the most bio-diverse on earth. Now, more than ever, preservation of that environment depends on improving understanding and cooperation between environmentalists and the native peoples who live there; and upon integrating traditional Amazonian and scientific knowledge of the natural world. The course addresses key ethnobiological questions such as: how do native Amazonian people classify plant and animal species? How do they understand the extinction or the emergence of new species? How do they understand plant and animal behavior? How is plant and animal ecology believed to serve as a model for understanding human society and vice versa? How should human emotions be regulated so as to better work with nature? What aesthetic, emotional or religious practices were developed to create bonds of empathy or communication between human beings and other species? What are the practical implications of the answers to these questions for collaborative environmental work with indigenous communities?

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1712 - AMAZONIAN ETHNOBOTONY

Minimum Credits: 3
Maximum Credits: 3

This course examines the cultural understanding and uses of plants in the Ecuadorian amazon. How do Amazonian people understand what plants are? How did they originate? How are they classified? How are they similar or different from humans? How are plant foods and medicines believed to work on the human body? How should they be harvested and prepared? What sorts of human moods or attitudes are necessary to work with plants? What ritual techniques are used to achieve empathy required to work successfully with plants?

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1713 - HEALTH, NUTRITION, AND POPULATION 1

Minimum Credits: 3
Maximum Credits: 3

This course will provide an introduction to the study of the health, population and nutrition concerns of indigenous peoples; provide an understanding of the health concerns of the Kichwa speaking people of the Ecuadorian amazon and provide a grounding for research on the health of Amazonian peoples. It will be taught as a combination of lectures, discussion of readings, site/field visits, interviewing of key actors and analysis of primary materials derived from interviews and observations of Kichwa people, healers and patients.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1714 - HEALTH, NUTRITION AND POPULATION 2

Minimum Credits: 3
Maximum Credits: 3

This course will continue the study of the health, nutrition and population of the NAPO Kichwa begun in HPNI. It will specifically address the historical and contemporary food systems of the NAOP Kichwa; the production and management of Chica (manioc beer) as a cultural superfood and dietary staple; the management of pregnancy and childbirth in the Kichwa ethnomedical system; the impact of the intercultural health movement and the millennium development goals for safe motherhood on the provision pregnancy and birth care services in the Ecuadorian national system; and the impact of biomedicine on Kichwa health practice. Hpnii will be taught as a combination of lectures, discussion of readings, site/field visits, interviewing of key actors and analysis of primary materials derived from interviews and observations of Kichwa people, healers and patients. It will have a significant independent research component.
ANTH 1716 - POLITICS OF GENDER AND FOOD

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 1718 - GENDER AND WORK IN CROSS CULTURAL PERSPECTIVE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 1721 - CYBER CULTURES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 1722 - CULTURE AND POLITICS OF MENTAL HEALTH

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 1723 - BLACK MASCULINITY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ANTH 1725 - SOCIAL AND HEALTH ISSUES IN EAST AFRICA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ANTH 1729 - BRAZIL
The course begins with an overview of Brazilian culture and of the country's enormous resource base. Cultural change is traced through the pre-Columbian, colonial, imperial, and republican periods. A major theme throughout is the evolution of a Portuguese heritage into today's distinctive Brazilian national culture. The country is then divided into five regions as a means of understanding its internal diversity. Popular American ideas about subjects like carnival, the amazon rainforest, coffee, Copacabana Beach, and the huge foreign debt are also dealt with.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ANTH 1730 - ETHNO-NATIONAL VIOLENCE**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

**ANTH 1734 - GENDER IN EAST ASIA**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**ANTH 1737 - SPECIAL TOPICS IN CULTURAL ANTHROPOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
This course will be on a topic in the area of specialization of a visiting scholar yet to be determined.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

**ANTH 1738 - GENDER PERSPECTIVES IN ANTHROPOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
This course analyzes gender perspectives in anthropology. Students are asked to consider how gender differences relate to women's and men's roles in productive labor, in property rights, and in family and kin relations. Special attention is given to the way gender and sexual difference are represented in culture.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**ANTH 1740 - GENDER, SEXUALITY, AND CHILDHOOD IN A GLOBAL CONTEXT**

Minimum Credits: 3  
Maximum Credits: 3
"Although childhood is often conflated with a biological category based on an immature body, in reality it is much more. Instead, this course examines the ways in which childhood is a discursive and continuously shifting category, one that changes across time and place. This course will introduce students to the study of children and childhood in a cross-cultural context and will pay particular attention to the ways in which notions of childhood, and the experience of being a child, draw from and reproduce understandings of gender and sexuality as they intersect with race, class, ethnicity, etc. Through readings, lectures, and films, we will also consider the meaning of gendered childhoods in light of contemporary forms of conception, children's culture (media, toys and artifacts, stories), child labor and play, and ritual and coming of age ceremonies. An analysis of these contemporary phenomena highlight local and regional notions of childhood and their intersection with broader global patterns."

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ANTH 1741 - ENERGY AND ENERGOPOLITICS IN EURASIA**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ANTH 1748 - CULTURES OF SOUTH AMERICA**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ANTH 1750 - UNDERGRADUATE SEMINAR**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ANTH 1751 - PEOPLE AND ENVIRONMENT IN AMAZONIA**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ANTH 1752 - ANTHROPOLOGY OF FOOD**
This course surveys the general subject of culinary anthropology. Topics include food exchanges and the construction of social groups, food and social boundaries, food taboos, symbolism of food, folk conceptions of food, sacrifice and food in religious contexts, world standardization of food preferences. Thus, the focus is on social aspects of food, eating, and exchange.

**Anthropology of Food**

*Minimum Credits: 3*
*Maximum Credits: 3*

This course outlines the origins and evolution of cities and explores their roles within their historical, social, and cultural contexts. It examines the nature of life in cities cross-culturally from the perspective of the inhabitants. Features associated with urban life—such as migration, squatter settlements, family organization, ethnicity, social stratification, social networks, and social pathologies—receive special attention.

**ANTH 1755 - Urban Anthropology**

*Minimum Credits: 3*
*Maximum Credits: 3*

This course reviews the development of economic anthropology as a special field of study. Emphasis is placed on economic change and the impact of industrialization on the third world. Ethnographic examples are drawn from Latin America, Africa, Asia, Oceania, and Europe. Topics to be discussed include economic theory in anthropology, exchange and the origin/use of money, the development of wage labor, marketing and commodity production, theories of economic development and underdevelopment.

**ANTH 1756 - Economic Anthropology**

This is a course on the social institutions of primitive and folk people throughout the world. It presents a general survey of kinship units and principles of organization that operates at the primitive, tribal, and folk levels. At the end of the course the main theories that anthropologists have employed in analyzing kinship and social organization will be discussed.

**ANTH 1757 - Social Organization**

This course examines anthropological analyses of law and law-like phenomena in a number of societies, including the United States. Particular attention is given to the various ways that disputes are resolved in different social and cultural settings, and to the theoretical analyses used to explain these differences.

**ANTH 1760 - Anthropology of Law**
ANTH 1761 - PATIENTS AND HEALERS: MEDICAL ANTHROPOLOGY I

Minimum Credits: 3  
Maximum Credits: 3  
This course surveys the field of medical anthropology and its history within the discipline of anthropology as a whole, from the perspective of social-cultural theory. Topics dealt with include ethnomedicine, ethnographic cases, cross-cultural studies of healing practices and connections between medicine and religion. Reference is also made to applied research in contemporary situations.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1762 - HUMAN ECOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the ecology of the human species. We will study how humans adapt to their physical and cultural environment, and the interrelationships between people and the environment. Topics discussed include evolution and adaptation, population growth and regulation, foraging and subsistence strategies and production decisions, population interactions and resource management, and energy and human society.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1763 - FIELD METHODS

Minimum Credits: 4  
Maximum Credits: 4  
This course is designed to acquaint students with basic ethnographic fieldwork techniques. Topics addressed include taking and managing fieldnotes on participant-observation, systematic or structured interviews, behavioral observation, and use of archival materials. There will also be some discussion of the relationship between research design, data collection, and data analysis.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1764 - CULTURES AND SOCIETIES OF INDIA

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to introduce students to the cultural history of India and to the culture and society of the modern country, concentrating on the description and analysis of modern Indian society. Topics to be covered include caste, kinship and marriage, village communities, law and society and politics in modern India.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ANTH 1768 - CULTURES AND SOCIETIES OF EASTERN EUROPE

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to the socialist countries of eastern Europe apart from the soviet union. It is particularly concerned with how the region has developed under socialism and with how the new, socialist societies have affected the different indigenous cultures. Topics include industrialization and transformation of agriculture, kinship and family, among others.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
ANTH 1770 - KINSHIP AND THE FAMILY

Minimum Credits: 3
Maximum Credits: 3
In this course Western and Non-western forms of kinship, family, and marriage will be discussed and analyzed. Special attention will be given to the history of European marriage, to family organization and industrialization, and to women's relation to kinship and family order. The differences in European and Non-European reactions to industrialization will be compared in some detail. Europe, China, India, and Japan will receive special attention.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1771 - RELIGION AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
Religion is thought, felt, and acted out in social and cultural contexts. The relationship between religion and culture is the focus of the course. The objectives are to understand religion wherever and whenever found, and to understand the anthropological approach in the cross cultural study of religion. Religious belief, ritual, myth, dogma and religious specialists in industrial and non-industrial societies are compared.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1773 - CULTURES OF MESOAMERICA

Minimum Credits: 3
Maximum Credits: 3
A general survey of problems and cultures of Mexico and Guatemala from the time of the Spanish conquest to the present. The course will be divided into three parts; MesoAmerica at the time of the arrival of the Spaniards; the colonial transformation of the Indian population; and the contemporary position of the Indians within the Pluri-Ethnic societies of which they are part.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1774 - PERSPECTIVES ON RELIGION

Minimum Credits: 3
Maximum Credits: 3
A serious introduction to the study of religion is undertaken by reviewing the efforts and insights of the principal scholars in the field in the modern period.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1775 - APPLIED ANTHROPOLOGY

Minimum Credits: 3
Maximum Credits: 3
Viewing applied anthropology as a possible career choice, this course will define the field, contrast it with basic anthropology, examine the concept of policy analysis, and survey the kinds of applied anthropology conducted within the realm of cultural anthropology (urban, education, community development, etc.). Methods and techniques used in applied anthropology will be reviewed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
ANTH 1776 - MYTH, SYMBOL AND RITUAL

Minimum Credits: 3
Maximum Credits: 3
A comparative examination of the myths, symbols, and rituals of different cultures.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1777 - AMERICAN CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course explores American culture as if it were strange and exotic. Topics covered include communication and speech styles, social class, race, and ethnicity, cults and religion, family, socialization, work and play, poverty and deviance, and changing values. Appropriate films and guest lectures are scheduled. A prior exposure to anthropology is not necessary as technical terms will be kept to a minimum and simply explained.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Anthropology (BA)

ANTH 1778 - CULTURES OF AFRICA

Minimum Credits: 3
Maximum Credits: 3
This course explores the traditional cultures and societies of Africa from prehistoric to modern times. Emphasis is on the conditions prior to contemporary changes but some attention is given to modern developments. Concern is with the variety of cultures on the continent, how people make a living, what family life is like, how disputes are settled, and religion. Through lectures, films, and readings, the student gets a feeling for life in this fascinating part of the world.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1780 - INTRODUCTION TO ANTHROPOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course surveys the biological and cultural heritages which distinguish humans from other advanced evolutionary forms. Through physical anthropology and prehistory, it outlines major developments over the past five million years. Through linguistic and sociocultural anthropology, it describes the universal features of social institutions and human behavior, drawing comparative examples from primitive, traditional, and modern societies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1784 - JAPANESE SOCIETY

Minimum Credits: 3
Maximum Credits: 3
This course will introduce students to contemporary Japanese culture and social institutions. Using scholarly books, essays, fiction and film, it will give students a range of different exposures to various aspects of Japanese society and everyday life: economic miracle, recession, middle class society, gender relations, sexuality, education, consumerism, and mass culture. The special focus of the course will be popular culture in Japan. We will review the postwar history of popular culture and consider the reasons for its recent appeal abroad.
Academic Career: Undergraduate
ANTH 1786 - CULTURES OF THE PACIFIC

Minimum Credits: 3
Maximum Credits: 3
This course examines the traditional and contemporary peoples and cultures of the Pacific islands. A geographical and historical review of the region is included.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1787 - SPECIAL TOPICS IN CULTURAL ANTHROPOLOGY

Minimum Credits: 1
Maximum Credits: 4
This course will be on a topic in the area of specialization of a visiting scholar yet to be determined.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

ANTH 1789 - AFRICAN AMERICAN FOLK CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course will explore several aspects of African American folk culture being defined as non-elite expressions of art, music, dance, theatre, literature, humor, material culture, and religious beliefs. Particular attention will be given to the role of folklore in the perpetuation and transmission of shared cultural knowledge among blacks in the United States.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1792 - POPULATION AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course centers its attention on the complex interplay between demographic process and outcomes (such as fertility and population growth, population decline and mortality, and migration) on the one hand, and social/cultural evolution and social/cultural forms studied by cultural anthropologists and archaeologists. We will critically review major concepts and theories in demography and demographic anthropology. Course takes the subject matter of population dynamics as the framework for examining important anthropological themes, debates and theories in the context of different societies/cultures.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Anthropology (BA)

ANTH 1797 - MOUNTAINS AND MEDICAL SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
India is a social, political and economic environment in which a broad range of South Asian medical systems have grown and developed over the course of several years. In the past 150 years these systems have been institutionalized and professionalized within the framework of colonial and national medical and public health policy. Many of these systems are intimately connected to the environment, and to the conceptualization,
categorization, production and consumption of natural resources. This course focuses on non-biomedical systems of medicine: Ayurveda, Unani, sidha, Tibetan medicine, yoga and nature cure and homeopathy, as each one of these is supported and regulated by the government of India. The purpose of the course is not to evaluate the effectiveness or medical value of these systems; it is to understand how these medical systems fit into a range of social, political, ecological, botanical and economic contexts. Given that a number of these medical systems are intimately linked to Himalayan botanical and environmental knowledge, the course will focus on the relationship between South Asian medical systems and mountain ecology.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1798 - RELIGION AND ECOLOGY

Minimum Credits: 3
Maximum Credits: 3
The Himalayas have inspired more religious thought, given rise to more forms of religious practice and are more distinctively featured in a spectrum of epic religious literature, than almost any other geographic region in the world, with the possible ' but unlikely 'exception of a small parcel of relatively dry hilly ground between Jerusalem and mecca. In any case, Siddhartha Gautham was born and taught in the shadow of the lower Himalayas, where Buddhism emerged in the 4th century BCE. Many specific mountains, lakes and rivers, as well as the broader geography of the Himalayas ' most notably sacred rivers ' define the landscape of Hindu mythology, pilgrimage and ritual. The practice of yoga as a metaphysical philosophy is intimately linked to the idea of mystical Himalayan masters. The Western watershed of the Punjab, including the iponymous five rivers ' Indus, Jhelum, Chenab, RAVI and Sutlej ' is the heartland of Sikh cultural and religious identity. In addition to being a center of medieval Hindu literary learning, Kashmir and the Western Himalayas, extending through the Hindu Kush, have defined routes of exchange, communication, conversion and confrontation between Greeks, Persians, Buddhist monks, and Mongol armies. More recently ' in terms of centuries ' Tibetan Buddhism has emerged out of a history of development in Lhasa ' relocated to McLeod Ganj in the early 1960s ' that combines elements of tantra from the southeastern Brahmaputra region with transmutations of Buddhism that have taken shape in greater china. Although not inspired by the Himalayas per se, Islam in South Asia has been shaped by geography and the environment in specific ways, and the development of a particular interpretation of the Koran in a small center of learning in the town of Deobandi ' close to where the epic battle of the Bhargava Gita is said to have been waged in Kurukshetra ' implicates the geography and geopolitics of the Himalayas in the emergence of reform oriented, Orthodox Islam.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1799 - HIMALAYAN POLITICAL ECOLOGY

Minimum Credits: 3
Maximum Credits: 3
The Himalayan region is characterized by dramatic climatic and geological variation, a tremendous range of biodiversity and a complex ecology. Within the region there is also profound cultural variation. This course seeks to provide a critical perspective on the ecology and environment of the Himalayas by examining how different groups at the village, state, national and international level are implicated in the political ecology of the mountains. We will look at the way in which village farming communities use natural resources, what kind of pressure is put on resources as a result of development and population growth, how the mountain environment shapes the politics and resource distribution at the level of the state and, finally, how environmental and energy issues shape national policy and international relations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ANTH 1801 - HIMALAYAN BIODIVERSITY

Minimum Credits: 3
Maximum Credits: 3
Ranging in altitude from several hundred meters above sea level to over seven thousand, from subtropical forests to high altitude meadows and deserts, and from areas with little or no rainfall to regions that are among the wettest in the world, the Himalayas define a geographical region of enormous geological variation and biodiversity. The goal of this course is to gain an understanding of this diversity, with a focus on ecology. More specifically we will examine ecology and ecosystems in terms of biosemiotics ' how and why organisms within an ecological niche communicate with one another, and how these patterns and structures of communication define different kinds of interdependence. Within the framework of
standard classificatory schemes ' mammals, birds, reptiles, insects ' we will focus on particular species and specific niche systems for more detailed biosemiotic/behavioral analysis.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**ANTH 1900 - INTERNSHIP IN ANTHROPOLOGY**

- **Minimum Credits:** 1
- **Maximum Credits:** 6

Working in consultation with faculty, advanced students wishing to pursue careers in anthropology have the opportunity to extend academic training to a practical work experience in a particular subfield of Anthropology. Students will be required to submit a preliminary proposal to a faculty sponsor preferably sometime during the prior term, or should respond to faculty listings of specific internship projects that will be posted. Examples of projects are: physical anthropology research at the Pittsburgh Zoo; analysis of archeological artifacts; local ethnographic or folklore research.

**Academic Career:** Undergraduate

**Course Component:** Internship

**Grade Component:** Satisfactory/No Credit

**ANTH 1901 - INDEPENDENT STUDY**

- **Minimum Credits:** 1
- **Maximum Credits:** 3

This course allows qualified students to develop highly personalized research projects in conjunction with a faculty sponsor. The student will have to develop a bibliography, outline an approach to the project, and devise a methodology. The project work products are agreed to by the student and the faculty sponsor. Typical products may be a report, paper, or other tangible result of the student's efforts.

**Academic Career:** Undergraduate

**Course Component:** Independent Study

**Grade Component:** LG/SNC Elective Basis

**ANTH 1902 - INDEPENDENT STUDY**

- **Minimum Credits:** 1
- **Maximum Credits:** 12

**Academic Career:** Undergraduate

**Course Component:** Independent Study

**Grade Component:** LG/SNC Elective Basis

**ANTH 1903 - DIRECTED RESEARCH-READINGS**

- **Minimum Credits:** 1
- **Maximum Credits:** 3

Not all topics in anthropology can be adequately addressed in formal courses. The reading course allows qualified students to develop a bibliography for a specific topic not covered by other courses in the department. The work is done in conjunction with a faculty sponsor, and the student and faculty sponsor jointly determine the work products for the course, a research paper or annotated bibliography based upon the readings is typical, but other products may be substituted.

**Academic Career:** Undergraduate

**Course Component:** Directed Studies

**Grade Component:** LG/SNC Elective Basis

**ARABIC 0101 - MODERN STANDARD ARABIC 1/EGYPTIAN 1**

- **Minimum Credits:** 5
- **Maximum Credits:** 5

**Academic Career:** Undergraduate
ARABIC 0102 - MODERN STANDARD ARABIC 2/EGYPTIAN 2

Minimum Credits: 5
Maximum Credits: 5
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0141 or ARABIC 0101; MIN GRAD 'C'

ARABIC 0103 - MODERN STANDARD ARABIC 3/EGYPTIAN 3

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0142 or ARABIC 0102 (Min Grade 'C')

ARABIC 0104 - MODERN STANDARD ARABIC 4/EGYPTIAN 4

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0143 or ARABIC 0103 (Min Grade 'C')

ARABIC 0105 - MODERN STANDARD ARABIC 5/EGYPTIAN 5

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0144 or ARABIC 0104 (Min Grade 'C')

ARABIC 0106 - MODERN STANDARD ARABIC 6/EGYPTIAN 6

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0145 or ARABIC 0105 (Min Grade 'C')

ARABIC 0121 - MODERN STANDARD ARABIC 1/LEVANTINE 1

Minimum Credits: 5
Maximum Credits: 5
Academic Career: Undergraduate
ARABIC 0122 - MODERN STANDARD ARABIC 2/LEVANTINE 2

Minimum Credits: 5  
Maximum Credits: 5  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0151 or ARABIC 0121; MIN GRAD 'C'

ARABIC 0123 - MODERN STANDARD ARABIC 3/LEVANTINE 3

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0152 or ARABIC 0122 (Min Grade 'C')

ARABIC 0124 - MODERN STANDARD ARABIC 4/LEVANTINE 4

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0153 or ARABIC 0123 (MIN GRADE 'C')

ARABIC 0125 - MODERN STANDARD ARABIC 5/LEVANTINE 5

Minimum Credits: 4  
Maximum Credits: 4  
Modern standard Arabic 1/Levantine 1  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0154 or ARABIC 0124 (MIN GRADE 'C')

ARABIC 0126 - MODERN STANDARD ARABIC 6/LEVANTINE 6

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0155 or ARABIC 0125 (MIN GRADE 'C')

ARABIC 0201 - EGYPTIAN ARABIC 1

Minimum Credits: 2  
Maximum Credits: 2
The first semester will be devoted to the presentation and practice of the basic sound patterns of the Egyptian dialect, its fundamental sentence patterns, and sufficient vocabulary for basic conversation. Cultural information will accompany language instruction to prepare students for a possible journey abroad.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: LING 0132; MIN GRADE: 'C'

ARABIC 0202 - EGYPTIAN ARABIC 2

Minimum Credits: 2
Maximum Credits: 2
The second term will introduce more elaborate conversations that include a more advanced level of grammar such as tenses and conjugations. By creating an interesting story line that follows the experience of two American tourists in Cairo, students will be able to listen to more authentic samples of the dialect and participate in more sophisticated conversations through class activities.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREF: LING 0701 (MIN GRADE: 'C'); CREQ: LING 0133 (MIN GRADE: 'C')

ARABIC 0203 - EGYPTIAN ARABIC 3

Minimum Credits: 2
Maximum Credits: 2
The third term will engage students more fully in authentic speech by giving them an insider's view of life in Egypt. Students will listen to authentic Egyptian conversations involving everyday problems, entertainment and professional life. This level introduces the colloquialisms of the modern Egyptian dialect.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREF: LING 0702 (MIN GRADE: 'C'); CREQ: LING 0134 (MIN GRADE: 'C')

ARABIC 0211 - IRAQI ARABIC 1

Minimum Credits: 2
Maximum Credits: 2
The first semester will be devoted to the presentation and practice of the basic sound patterns of the Iraqi dialect, its fundamental sentence patterns, and sufficient vocabulary for basic conversation. Cultural information will accompany language instruction to prepare students for a possible journey abroad.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: LING 0132; MIN GRADE: 'C'

ARABIC 0212 - IRAQI ARABIC 2

Minimum Credits: 2
Maximum Credits: 2
The second term will introduce more elaborate conversations that include a more advanced level of grammar such as tenses and conjugations. By creating an interesting story line that follows the experience of two Americans in Baghdad, students will be able to listen to more authentic samples of the dialect and participate in more sophisticated conversations through class activities.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0711 (MIN GRADE: 'C'); CREQ: LING 0133 (MIN GRADE: 'C')

ARABIC 0213 - IRAQI ARABIC 3

Minimum Credits: 2
Maximum Credits: 2
The third term will engage students more fully in authentic speech by giving them an insider's view of life in Iraq. Students will listen to authentic Egyptian conversations involving everyday problems, entertainment and professional life. This level introduces the colloquialisms of the modern Iraqi dialect.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0712 (MIN GRADE: 'C'); CREQ: LING 0134 (MIN GRADE: 'C')

ARABIC 0221 - LEVANTINE ARABIC 1

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0131 (MIN GRADE: 'C'); CREQ: LING 0132 (MIN GRADE: 'C')

ARABIC 0222 - LEVANTINE ARABIC 2

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0132 and 0721; CREQ: LING 0133; MIN GRADE 'C' For Listed Courses

ARABIC 0223 - LEVANTINE ARABIC 3

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ARABIC 0231 - MOROCCAN ARABIC 1

Minimum Credits: 2
Maximum Credits: 2
The first semester will be devoted to the presentation and practice of the basic sound patterns of the Moroccan dialect, its fundamental sentence patterns, and sufficient vocabulary for basic conversation. Cultural information will accompany language instruction to prepare students for a possible journey abroad.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: LING 0132; MIN GRADE: 'C'
ARABIC 0232 - MOROCCAN ARABIC 2

Minimum Credits: 2  
Maximum Credits: 2  
The second term will introduce more elaborate conversations that include a more advanced level of grammar such as tenses and conjugations. By creating an interesting story line that follows the experience of two American tourists in rabat, students will be able to listen to more authentic samples of the dialect and participate in more sophisticated conversations through class activities.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0731 (MIN GRADE: 'C'); CREQ: LING 0133 (MIN GRADE: 'C')

ARABIC 0233 - MOROCCAN ARABIC 3

Minimum Credits: 2  
Maximum Credits: 2  
The third term will engage students more fully in authentic speech by giving them an insider's view of life in morocco. Students will listen to authentic Moroccan conversations involving everyday problems, entertainment and professional life. This level introduces the colloquialisms of the modern Moroccan dialect.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0732 (MIN GRADE: 'C'); CREQ: LING 0134 (MIN GRADE: 'C')

ARABIC 1115 - READINGS IN ARABIC

Minimum Credits: 3  
Maximum Credits: 3  
This course improves the proficiency of students of Arabic at the high intermediate level and above through reading and discussion of authentic Arabic texts. These texts will include both fiction (e.g. Excerpts from novels, short stories, etc.) And non-fiction (e.g. Newspaper articles, essays, political speeches, etc.) And will cover major areas of interest in Arabic writing, be they political, social or literary, and reflect the opinions of major Arabic authors on these issues.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0143 or 0153 or ARABIC 0103 or ARABIC 0123 (MIN GRADE: 'B'); CREQ: LING 0144 or 0154 or ARABIC 0104 or 0124 (MIN GRADE: 'B'); PROG: Dietrich Sch Arts and Sciences

ARABIC 1615 - ARABIC LIFE AND THOUGHT

Minimum Credits: 3  
Maximum Credits: 3  
The primary objective of the course is to introduce students to the cultures of the Arab world in order for them to understand the Arab character apart from stereotypes. The course will also examine the wide variety of ethnicities that are summarily defined as Arab. The main foci of the course will be the understanding of the contemporary Arab mind, the experiences that shaped it, and how Arabs convey it.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ARABIC 1620 - ARAB CINEMA

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate
ARABIC 1635 - INTRODUCTION TO MODERN ARABIC LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ANY ENGCMP COURSE

ARABIC 1705 - INTRODUCTION TO ARABIC LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020

ARABIC 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARABIC 1905 - UNDERGRADUATE TEACHING ASSISTANT IN ARABIC

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARABIC 1909 - SPECIAL TOPICS IN ARABIC

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0133 or 0143 or 0153; PROG: Dietrich Sch Arts and Sciences

ARTSC 0020 - LATIN AMERICA AND CARIBBEAN

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to provide students with substantial knowledge concerning the geography, history, and culture of Latin America and the Caribbean and to introduce them to how issues related to the region are studied from a variety of disciplinary perspectives.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### ARTSC 0111 - RIGHT START 1

**Minimum Credits:** 1  
**Maximum Credits:** 1  
This course is designed to enhance the academic skills of new students participating in the student support services project (SSS). The course will use collaborative learning strategies to address such topics as note-taking, problem-solving, time-management, test-taking, and goal-setting. This course is very interactive and will use multiple methods of communication and technology to apprise students of course activities along with upcoming SSS events.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade

### ARTSC 0112 - RIGHT START TO COLLEGE 2

**Minimum Credits:** 1  
**Maximum Credits:** 1  
You must be a part of the trio student support services (SSS) program to take this course. This course is designed to enhance the level of career awareness of students in the student support services (SSS) program. The course will focus on the following topics: academic majors, resume-writing, interview techniques, professional communication, and career investigation. This course is interactive and will use multiple methods of communication and technology to apprise students of course activities along with upcoming SSS events.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade

### ARTSC 0113 - RIGHT START TO COLLEGE 3

**Minimum Credits:** 1  
**Maximum Credits:** 1  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

### ARTSC 0114 - RIGHT START TO COLLEGE 4

**Minimum Credits:** 1  
**Maximum Credits:** 1  
This course is designed for sophomore, junior or senior level participants in the Student Support Services Project (SSS). It will be a directed study of the graduate school process, career investigation, world of work, and life skills. This course will meet eight times and is structured to be independent in its nature. Students will be expected to meet once each month with their assigned SSS advisor and once each month according to the course schedule. Attendance at specific SSS workshops will be required. Students will be expected to create either a portfolio and/or a mini presentation to complete the course successfully. This course is limited to only students eligible for the SSS project and who have taken both ARTSC 0111 Right Start to College 1 and ARTSC 0112 Right Start to College 2.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

### ARTSC 0120 - FIRST EXPERIENCES IN RESEARCH
First experiences in research allows an undergraduate student to learn about and to participate in research with a faculty member outside of regular course requirements. The student receives orientation and training for the research project, an introduction to the research hypothesis, and learns about previous research conducted on the topic to date. The student participates in relevant training workshops. The student meets regularly with the faculty mentor and every other week with other undergraduate student researchers.

**ARTSC 0121 - CONTINUING EXPERIENCES IN RESEARCH**

Minimum Credits: 1  
Maximum Credits: 2  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 0125 - SPECIAL TOPICS IN RESEARCH**

Minimum Credits: 1  
Maximum Credits: 1  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Satisfactory/No Credit

**ARTSC 0150 - INTRODUCTION TO GLOBAL STUDIES**

Minimum Credits: 3  
Maximum Credits: 3  
The course provides an introduction to interdisciplinary approaches to global studies. It examines current global trends and issues in ways that encourage students to think critically about how we analyze, interpret, and respond to global phenomena and their consequences for different regions, localities, and groups. It gives particular attention to the concept of globalization, highlighting the controversies surrounding its use and helping students to engage core debates about the impact of global and transnational processes on cultural interactions, economic and social relations, politics and governance, security, and the possibility of sustainable development.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**ARTSC 0500 - INTRODUCTION TO STUDY ABROAD**

Minimum Credits: 1  
Maximum Credits: 1  
This course explores the study abroad experience. It also addresses the issues of cultural diversity, international understanding and the role of the individual in the global community. The course will inform students of the ways in which study abroad complements and augments their academic program, career goals, and overall personal development. 
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Satisfactory/No Credit

**ARTSC 0600 - ESL EDUCATION**

Minimum Credits: 3  
Maximum Credits: 15
ARTSC 0900 - SEMINAR IN PEER TUTORING

Minimum Credits: 1  
Maximum Credits: 1

ARTSC 1001 - INTERNATIONAL STUDIES - LONDON

Minimum Credits: 3  
Maximum Credits: 3
The course aims to emphasize the interconnections between society, economics, politics and the physical environment. This will involve an analysis of British Society in the 20th century, commencing with a review of post war ideology, politics and economics.

ARTSC 1002 - INTERNATIONAL STUDIES - CUBA

Minimum Credits: 3  
Maximum Credits: 3
This course is offered as part of the Pitt in Cuba study abroad program to give students an introduction to Cuban culture, religion, race, art, literature, music and society and to provide them with context for their experiences in Havana, Cuba. This course will also familiarize students with the history of Cuba and its often difficult relationship with the United States.

ARTSC 1004 - GLOBAL DIVERSITY

Minimum Credits: 0  
Maximum Credits: 0

ARTSC 1300 - PROJECT BASED TECHNOLOGY DESIGN

Minimum Credits: 1  
Maximum Credits: 1

ARTSC 1401 - ELECTIVE AT VERITAS UNIVERSITY

Minimum Credits: 3  
Maximum Credits: 3
ARTSC 1402 - ELECTIVE AT VERITAS UNIVERSITY 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

ARTSC 1403 - ELECTIVE IN CHINA

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1450 - LONDON FIELD STUDIES

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1499 - STUDY ABROAD: LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1500 - STUDY ABROAD: EL SALVADOR

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1501 - SEMINAR: LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
In this seminar, students receive background knowledge on Latin America and the Caribbean to prepare them for a field trip to that region in the summer. Specifically, the seminar is designed to: a) provide students with a broad knowledge of the history, politics, society, and geography; b) aid students in defining and preparing for original research to be undertaken during the summer field trip; and c) prepare students for a six-week home stay living experience.
Academic Career: Undergraduate
ARTSC 1502 - FIELD TRIP: LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
Field trip to Latin America. Participants will conduct field research on topics developed during the spring term seminar.

ARTSC 1503 - STUDY ABROAD: CAMEROON

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1505 - STUDY ABROAD: ARGENTINA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1506 - STUDY ABROAD: AUSTRALIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1507 - STUDY ABROAD: AUSTRIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1508 - STUDY ABROAD: BRAZIL

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1509 - STUDY ABROAD: BELGIUM
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1510 - STUDY ABROAD: CANADA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1511 - STUDY ABROAD: BOLIVIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1512 - STUDY ABROAD: CHILE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1514 - STUDY ABROAD: CYPRUS

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1515 - STUDY ABROAD: CHINA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1517 - STUDY ABROAD: COLOMBIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ARTSC 1518 - STUDY ABROAD: COSTA RICA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1519 - STUDY ABROAD: CZECH REPUBLIC
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1520 - STUDY ABROAD: SLOVAKIA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1521 - STUDY ABROAD: DOMINICAN REPUBLIC
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1522 - STUDY ABROAD: DENMARK
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1524 - STUDY ABROAD: ECUADOR
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1525 - STUDY ABROAD: ENGLAND
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1527 - STUDY ABROAD: FRANCE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1529 - STUDY ABROAD: GERMANY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1530 - STUDY ABROAD: FINLAND

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1531 - STUDY ABROAD: GREECE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1532 - STUDY ABROAD: GUATEMALA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1533 - STUDY ABROAD: HUNGARY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1534 - STUDY ABROAD: HONG KONG
Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1535 - STUDY ABROAD: IRELAND

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1537 - STUDY ABROAD: HONDURAS

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1538 - STUDY ABROAD: ISRAEL

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1539 - STUDY ABROAD: NORTHERN IRELAND

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1540 - STUDY ABROAD: ITALY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1541 - STUDY ABROAD: JAMAICA

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ARTSC 1542 - STUDY ABROAD: JAPAN

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

ARTSC 1544 - STUDY ABROAD: JORDAN

Minimum Credits: 1  
Maximum Credits: 16  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

ARTSC 1545 - STUDY ABROAD: KENYA

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

ARTSC 1546 - STUDY ABROAD: LEBANON

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

ARTSC 1547 - STUDY ABROAD: SOUTH KOREA

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

ARTSC 1548 - STUDY ABROAD: LITHUANIA

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

ARTSC 1549 - STUDY ABROAD: MALTA

Minimum Credits: 3  
Maximum Credits: 15  
Academic Career: Undergraduate
**ARTSC 1550 - STUDY ABROAD: MEXICO**

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1551 - STUDY ABROAD: MOROCCO**

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1552 - STUDY ABROAD: NETHERLANDS**

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1553 - STUDY ABROAD: NEW ZEALAND**

Minimum Credits: 3  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1554 - STUDY ABROAD: NORWAY**

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1555 - STUDY ABROAD: NEPAL**

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1556 - STUDY ABROAD: NICARAGUA**
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1557 - STUDY ABROAD: PANAMA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1558 - STUDY ABROAD: POLAND

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1560 - STUDY ABROAD: BOTSWANA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1561 - STUDY ABROAD: TAJIKISTAN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1562 - STUDY ABROAD: RUSSIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1563 - STUDY ABROAD PORTUGAL

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis
ARTSC 1564 - STUDY ABROAD: SCOTLAND
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1565 - STUDY ABROAD: SINGAPORE
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1566 - STUDY ABROAD: SPAIN
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1567 - STUDY ABROAD: EUROPE
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1568 - STUDY ABROAD: KAZAKHSTAN
Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1569 - STUDY ABROAD: FRANCE AND THE CZECH REPUBLIC
Minimum Credits: 6
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1570 - STUDY ABROAD: SWEDEN
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
ARTSC 1571 - STUDY ABROAD: SWITZERLAND

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1572 - STUDY ABROAD: BOLIVIA, MOROCCO, VIETNAM

Minimum Credits: 6
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1573 - STUDY ABROAD: BULGARIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1574 - STUDY ABROAD: TONGA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1575 - STUDY ABROAD: TAIWAN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1576 - STUDY ABROAD: TURKEY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1577 - STUDY ABROAD: TASMANIA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1578 - STUDY ABROAD: UGANDA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1579 - STUDY ABROAD: AUSTRALIA AND NEW ZEALAND

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1580 - STUDY ABROAD: THAILAND

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1581 - STUDY ABROAD: UKRAINE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1582 - STUDY ABROAD: VENEZUELA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1583 - STUDY ABROAD: WALES

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ARTSC 1584 - STUDY ABROAD: VIETNAM

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1586 - STUDY ABROAD: ZIMBABWE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1591 - STUDY ABROAD: FRANCE AND SENEGAL

Minimum Credits: 6
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1593 - STUDY ABROAD: SPAIN AND BONAIRE

Minimum Credits: 6
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1594 - STUDY ABROAD: ENGLAND AND THE NETHERLANDS

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1595 - STUDY ABROAD: TUNISIA

Minimum Credits: 6
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1596 - STUDY ABROAD: KAZAKHSTAN

Minimum Credits: 12
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1597 - STUDY ABROAD: ARGENTINA, SOUTH AFRICA, VIETNAM
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1598 - STUDY ABROAD: KYRGYZSTAN
Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1599 - EXCHANGE: UNIVERSITY OF EXETER, UNITED KINGDOM
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1618 - STUDY ABROAD: INDIA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1619 - STUDY ABROAD: EGYPT
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1620 - STUDY ABROAD: ICELAND
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1621 - STUDY ABROAD: SERBIA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1622 - STUDY ABROAD: GEORGIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1623 - STUDY ABROAD: GHANA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1624 - STUDY ABROAD: CROATIA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1626 - STUDY ABROAD: TURKS AND CAICOS

Minimum Credits: 12
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1627 - STUDY ABROAD: MADAGASCAR

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1628 - STUDY ABROAD: SAMOA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ARTSC 1630 - STUDY ABROAD: SENEGAL

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1632 - STUDY ABROAD: INDONESIA

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1633 - STUDY ABROAD: UNITED ARAB EMIRATES

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1634 - STUDY ABROAD - AZERBAIJAN

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1635 - STUDY ABROAD: ARMENIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1636 - STUDY ABROAD: PHILIPPINES

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1638 - STUDY ABROAD: TANZANIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1639 - STUDY ABROAD: SOUTH AFRICA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1641 - STUDY ABROAD: PERU
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1642 - STUDY ABROAD: CUBA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1644 - STUDY ABROAD: BELIZE
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1646 - STUDY ABROAD: FIJI
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1647 - STUDY ABROAD: CAMBODIA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1668 - INTERNATIONAL RESEARCH ABROAD PROGRAM
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1682IS - RUSSIA ENERGY PROGRAM- IN-STATE

Minimum Credits: 0
Maximum Credits: 0
Non-graded course for in-state tuition.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1682OS - RUSSIA ENERGY PROGRAM- OUT-OF-STATE

Minimum Credits: 0
Maximum Credits: 0
Non-graded course for out-of-state tuition.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1685 - STUDY ABROAD: COMPARATIVE JUSTICE IN IRELAND

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1686 - STUDY ABROAD: CULTURE AND LANGUAGE IN IRELAND OS

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1687 - PITT IN VERSAILLES

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1694 - PITT IN SWEDEN

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

**ARTSC 1695 - PITT IN AMSTERDAM**

Minimum Credits: 3  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1696 - PITT IN JAPAN YEAR PROGRAM**

Minimum Credits: 3  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1697 - STUDY ABROAD: CZECH REPUBLIC AND SPAIN**

Minimum Credits: 3  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Satisfactory/No Credit

**ARTSC 1698 - STUDY ABROAD: THREE COUNTRIES**

Minimum Credits: 3  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1705 - PITT IN BRAZIL**

Minimum Credits: 1  
Maximum Credits: 1  
Pitt in Brazil  
Academic Career: UGRD  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis

**ARTSC 1705IS - PITT IN BRAZIL - IS**

Minimum Credits: 0  
Maximum Credits: 0  
Non-graded course for in-state tuition.  
Academic Career: UGRD  
Course Component: Independent Study  
Grade Component: No Grade Required
ARTSC 1705OS - PITT IN BRAZIL - OS

Minimum Credits: 0
Maximum Credits: 0
Non-graded course for in-state tuition.
Academic Career: UGRD
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1706IS - PITT IN CHINA AND INDIA - IS

Minimum Credits: 0
Maximum Credits: 0
Non-graded course for in-state tuition.
Academic Career: UGRD
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1709 - GLOBAL MENTAL HEALTH PROFESSIONS

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1710 - PITT IN SCOTLAND

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1710IS - PITT IN SCOTLAND - IS

Minimum Credits: 0
Maximum Credits: 0
Academic Career: UGRD
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1746 - STUDY ABROAD: SLOVAKIA

Minimum Credits: 9
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1748 - STUDY ABROAD: MONGOLIA
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1771 - PITT IN DUBLIN: TRINITY COLLEGE DUBLIN COURSE 1

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1772 - PITT IN DUBLIN: TRINITY COLLEGE DUBLIN COURSE 2

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1773 - PITT IN DUBLIN: TRINITY COLLEGE DUBLIN COURSE 3

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1774 - PITT IN DUBLIN: TRINITY COLLEGE DUBLIN COURSE 4

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1775 - PITT IN DUBLIN: TRINITY COLLEGE DUBLIN COURSE 5

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1778 - INTER-PROFESSIONAL STUDIES IRELAND SPRING BREAK

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ARTSC 1780 - UNIVERSITY COLLEGE DUBLIN

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1781 - UNIVERSITY COLLEGE DUBLIN COURSE 1

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1782 - UNIVERSITY COLLEGE DUBLIN COURSE 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1783 - UNIVERSITY COLLEGE DUBLIN COURSE 3

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1784 - UNIVERSITY COLLEGE DUBLIN COURSE 4

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1785 - UNIVERSITY COLLEGE DUBLIN COURSE 5

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1791 - PITTSBURGH-LONDON FILM PROGRAM COURSE 1

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
**ARTSC 1792 - PITTSBURGH-LONDON FILM PROGRAM COURSE 2**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis

**ARTSC 1793 - PITTSBURGH-LONDON FILM PROGRAM COURSE 3**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis

**ARTSC 1794 - PITTSBURGH-LONDON FILM PROGRAM COURSE 4**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis

**ARTSC 1795 - PITTSBURGH-LONDON FILM PROGRAM COURSE 5**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis

**ARTSC 1803 - PITTMAP: GLOBAL POLITICAL ECONOMY**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**ARTSC 1804 - EXCHANGE: CIDE, MEXICO**

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

**ARTSC 1805 - EXCHANGE: INST SCIENCES PO, FRANCE**

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1321
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1806 - EXCHANGE: LINKOPING UNIVERSITY, SWEDEN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1807 - EXCHANGE: I.F.I., FRANCE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1808 - EXCHANGE: NATIONAL TAIWAN UNIVERSITY, TAIWAN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1809 - EXCHANGE: REMIN UNIVERSITY, CHINA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1810 - EXCHANGE: SOPHIA UNIVERSITY, JAPAN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1811 - EXCHANGE: CHINESE UNIVERSITY OF HONG KONG

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ARTSC 1812 - EXCHANGE: UNIVERSITY OF HONG KONG

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1813 - EXCHANGE: UNIVERSITE LIBRE DE BRUXELLES, BELGIUM

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1814 - EXCHANGE: UNIVERSITY OF CANTABRIA, SPAIN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1816 - EXCHANGE: LEIDEN UNIVERSITY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1817 - EXCHANGE: UNIVERSITY OF KITAKYUSHU, JAPAN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1818 - EXCHANGE: KOBE UNIVERSITY JAPAN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1819 - EXCHANGE: UNIVERSITY OF ADELAIDE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1820 - EXCHANGE: RITSUMEIKAN, JAPAN

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1821 - EXCHANGE: YONSEI UNIVERSITY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1822 - EXCHANGE: SEOUL NATIONAL UNIVERSITY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1823 - EXCHANGE: KOREA UNIVERSITY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1824 - EXCHANGE: MACQUARIE UNIVERSITY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1825 - EXCHANGE: TEC DE MONTERREY, MEXICO

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1826 - EXCHANGE: KOC UNIVERSITY
ARTSC 1827 - INTERNATIONAL EXCHANGE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1834 - EXCHANGE: UNIVERSITIES OF APPLIED SCIENCE, GERMANY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1835 - EXCHANGE: UNIVERSITY OF SHEFFIELD, UNITED KINGDOM

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1838 - EXCHANGE: UNIVERSITY OF SUSSEX, UNITED KINGDOM

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1841 - EXCHANGE: UNIVERSITY OF WALES, ABERYSWYTH, UNITED KINGDOM

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1842 - EXCHANGE: UNIVERSITY OF BIRMINGHAM, UNITED KINGDOM

Minimum Credits: 6
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ARTSC 1845 - EXCHANGE: UNIVERSITY DE MONTEVIDEO, URUGUAY

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1846 - EXCHANGE: NATIONAL UNIVERSITY OF SINGAPORE

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1850IS - CAMBRIDGE SCHOLARS- IS

Minimum Credits: 0
Maximum Credits: 0
Non-graded course for in-state tuition.
Academic Career: UGRD
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1850OS - CAMBRIDGE SCHOLARS-OS

Minimum Credits: 0
Maximum Credits: 0
Non-graded course for out-of-state tuition.
Academic Career: UGRD
Course Component: Independent Study
Grade Component: No Grade Required

ARTSC 1851 - CAMBRIDGE COURSE 1

Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1852 - CAMBRIDGE COURSE 2

Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1853 - CAMBRIDGE COURSE 3
Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1854 - CAMBRIDGE COURSE 4

Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1855 - CAMBRIDGE COURSE 5

Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1856 - CAMBRIDGE COURSE 6

Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ARTSC 1861 - UNIVERSITY COLLEGE LONDON COURSE 1

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1862 - UNIVERSITY COLLEGE LONDON COURSE 2

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1863 - UNIVERSITY COLLEGE LONDON COURSE 3

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis
ARTSC 1864 - UNIVERSITY COLLEGE LONDON COURSE 4
Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1865 - UNIVERSITY COLLEGE LONDON COURSE 5
Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1871 - PITT IN THE PACIFIC ELECTIVE 1
Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1872 - PITT IN THE PACIFIC ELECTIVE 2
Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ARTSC 1873 - PITT IN THE PACIFIC ELECTIVE 3
Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ARTSC 1874 - PITT IN THE PACIFIC ELECTIVE 4
Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ARTSC 1875 - PITT IN THE PACIFIC ELECTIVE 5
Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
ARTSC 1899 - INTERNSHIP ABROAD

Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

ARTSC 1900 - ARTSC ACADEMIC INTERNSHIP

Minimum Credits: 1
Maximum Credits: 3
An academic internship offers students a unique learning opportunity to connect classroom knowledge with real-world settings as they explore careers and gain valuable experience. Students may earn from 1-3 credits for an experience that can be related to an academic field of study. The experience must be pre-professional in nature and must be approved by the Dietrich School Office of Undergraduate Research. Students must seek out and apply for their own internship. Internship can be found through Career Development and Placement Assistance, or students can contact the Office of Undergraduate Research. Students who are earning credit for ARTSC 1900 internships may not receive pay. Students must work at least 120 hours over the course of the term to be eligible for the maximum of 3 credits. In order to earn credit, the student must have a Dietrich School faculty sponsor (full-time only) who will assign related academic work. Internships are graded as S/NC.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

ARTSC 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
Independent study entails an independent program of study, research, or creative activity with some guidance from a sponsoring faculty member.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1902 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ARTSC 1903 - INTERNSHIP IN LONDON

Minimum Credits: 3
Maximum Credits: 6
An internship is a special type of independent study in which the student works in a non-academic setting. The internship should be directly related to an academic discipline, and the student's learning is evaluated and graded by a faculty member. Internships under this course listing are conducted in London, England, as part of Pitt's London study abroad program.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ARTSC 1910 - INSTITUTE OF POLITICS INTERNSHIP

Minimum Credits: 2
Maximum Credits: 2
This course represents the experiential component of the politics institute's undergraduate internship. The purpose of the internship experience is to provide the student with direct exposure to the process of public decision-making. Each student will work with an individual or office directly involved in the policy-making process. Students will be selected through a competitive process.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

ARTSC 1917 - INDEPENDENT STUDY ABROAD

Minimum Credits: 1
Maximum Credits: 12
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1918 - INTERNSHIP IN CHINA

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

ARTSC 1930 - STUDY ABROAD: ESTONIA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ARTSC 1950 - PEER TUTORING EXPERIENCE

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Satisfactory/No Credit

ATHLTR 1811 - BASIC ATHLETIC TRAINING

Minimum Credits: 3
Maximum Credits: 3
This course is designed to provide the student with an introduction to the athletic training profession. Topics to include medical terminology, mechanisms of injury, and recognition and treatment of common athletic injuries to major body parts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Minimum Credits</th>
<th>Maximum Credits</th>
<th>Description</th>
<th>Academic Career</th>
<th>Course Component</th>
<th>Grade Component</th>
<th>Course Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATHLTR 1812</td>
<td>BASIC ATHLETIC TRAINING LAB</td>
<td>1</td>
<td>1</td>
<td>An introduction to basic taping techniques and injury evaluation techniques used in the profession of athletic training. Basic supportive strappings and paddings for immediate care and competition are presented as well as basic joint evaluation procedures, assessment of vital signs, and crutch fitting.</td>
<td>Undergraduate</td>
<td>Clinical</td>
<td>Letter Grade</td>
<td>PLAN: Athletic Training (BS, BS-H, BPH)</td>
</tr>
<tr>
<td>ATHLTR 1821</td>
<td>INJURY EVALUATION AND TREATMENT 1</td>
<td>3</td>
<td>3</td>
<td>The course includes anatomy, recognition, and commonly accepted techniques and procedures for clinical evaluation of common athletic injuries to the foot, ankle, leg, thigh, hip, pelvis and lumbar spine.</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Letter Grade</td>
<td>PLAN: Athletic Training (BS, BS-H, BPH)</td>
</tr>
<tr>
<td>ATHLTR 1822</td>
<td>INJURY EVALUATION AND TREATMENT 2</td>
<td>3</td>
<td>3</td>
<td>The course includes anatomy, recognition, and commonly accepted techniques and procedures for clinical evaluation of common athletic injuries to the shoulder, arm, elbow, fore arm, wrist, hand, head, face, cervical and thoracic spine, and internal organs.</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Letter Grade</td>
<td>PLAN: Athletic Training (BS, BS-H, BPH)</td>
</tr>
<tr>
<td>ATHLTR 1823</td>
<td>ADMINISTRATIVE ASPECTS OF ATHLETIC TRAINING</td>
<td>2</td>
<td>2</td>
<td>This course presents current administrative issues in athletic training including training room facility and design, record keeping procedures, personnel management and recruitment, medico-legal considerations and budgetary principles.</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Letter Grade</td>
<td>PLAN: Athletic Training (BS, BS-H, BPH)</td>
</tr>
<tr>
<td>ATHLTR 1824</td>
<td>ATHLETIC TRAINING PRACTICUM 1</td>
<td>3</td>
<td>3</td>
<td>Designed to supplement first clinical experience presented in seminar fashion to address clinical proficiencies published in the 3rd edition of the NATA athletic training educational competencies introduced in the second semester academic courses. Presented by faculty of the AT program then evaluated in clinical setting in live situations when possible or under simulated conditions when narrated. Specific emphasis placed on those proficiencies that can be grouped into modules and which do not receive broad coverage in an academic course.</td>
<td>Undergraduate</td>
<td>Practicum</td>
<td></td>
<td>PLAN: Athletic Training (BS, BS-H, BPH)</td>
</tr>
</tbody>
</table>
Grade Component: Letter Grade  
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

**ATHLTR 1831 - THERAPEUTIC MODALITIES AND LAB**

Minimum Credits: 4  
Maximum Credits: 4  
The course presents the theoretical basis for use of superficial heat and cold, ultrasound, electrical muscle stimulation, tens, and other current modalities. Laboratory experiences are included in the use of these modalities.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

**ATHLTR 1832 - THERAPEUTIC EXERCISE AND LAB**

Minimum Credits: 4  
Maximum Credits: 4  
The course includes basic components of a comprehensive rehabilitation program and theory and principles associated with the use of special evaluation/therapeutic exercise techniques. Laboratory experiences include practical use of manual testing techniques, goniometry, and the application of selected types of manual exercises.  
Academic Career: Undergraduate  
Course Component: Clinical  
Grade Component: Letter Grade  
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

**ATHLTR 1833 - STRENGTH AND CONDITIONING**

Minimum Credits: 2  
Maximum Credits: 2  
Instruction is provided describing the physiological basis for development of pre-season, in-season and off-season strength and conditioning programs. Laboratory experiences will include the theory and technique of operating contemporary isotonic, isokinetic and isometric strength training equipment.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

**ATHLTR 1834 - SPECIAL TOPICS IN ATHLETIC TRAINING**

Minimum Credits: 2  
Maximum Credits: 2  
The course includes common orthopedic problems encountered by the athletic trainer and orthopedic surgeon. Students are exposed to commonly used techniques of primary and reconstructive surgery through lecture, operating room, clinic, and orthopedic rounds experiences.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

**ATHLTR 1835 - ATHLETIC TRAINING PRACTICUM 2**

Minimum Credits: 3  
Maximum Credits: 3  
Designed to supplement second clinical experience presented in seminar fashion to address clinical proficiencies published in the 3rd edition of the
NATA athletic training educational competencies introduced in the second semester academic courses. Presented by faculty of the AT program then evaluated in clinical setting in live situations when possible or under simulated conditions when narrated. Specific emphasis placed on those proficiencies that can be grouped into modules and which do not receive broad coverage in an academic course.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

ATHLTR 1841 - ATHLETIC TRAINING PRACTICUM 3

Minimum Credits: 3
Maximum Credits: 3
Designed to supplement third clinical experience presented in seminar fashion to address clinical proficiencies published in the 3rd edition of the NATA athletic training educational competencies introduced in the second semester academic courses. Presented by faculty of the AT program then evaluated in clinical setting in live situations when possible or under simulated conditions when narrated. Specific emphasis placed on those proficiencies that can be grouped into modules and which do not receive broad coverage in an academic course.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

ATHLTR 1842 - ATHLETIC TRAINING PRACTICUM 4

Minimum Credits: 3
Maximum Credits: 3
Designed to supplement fourth clinical experience presented in seminar fashion to address clinical proficiencies published in the 3rd edition of the NATA athletic training educational competencies introduced in the second semester academic courses. Presented by faculty of the AT program then evaluated in clinical setting in live situations when possible or under simulated conditions when narrated. Specific emphasis placed on these proficiencies that can be grouped into modules and which do not receive broad coverage in an academic course.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

ATHLTR 1843 - ADVANCED ORTHOPEDIC ASSESSMENT

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Athletic Training (BS, BPH, or BS-H)

ATHLTR 1866 - PSYCHOLOGY OF SPORT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Athletic Training (BS, BS-H, BPH)

ATHLTR 1885 - INTRODUCTION TO EVIDENCE BASED REHABILITATION
Minimum Credits: 3
Maximum Credits: 3
Provides basic skills in reading, reviewing, and critiquing the research literature in the rehab sciences. These skills will be applied to the relevant literature in diagnosis, prognosis and intervention strategies within the spectrum of rehab science. Students learn to generate relevant research questions, utilize an evidenced based medicine approach, appraisal and synthesis of current articles within the fore mentioned areas. Will culminate in an individual review project aimed the development and resolution of one research question, using the best, current available literature
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Rehabilitation Science (BS)

ATHLTR 1899 - INDEPENDENT STUDY FOR ATHLETIC TRAINING STUDENTS

Minimum Credits: 1
Maximum Credits: 3
Provides advanced athletic training students an opportunity to explore in depth an area of particular interest to them. It is the student's responsibility to find a faculty member willing to undertake such a tutorial. An individual contract will be required for each student that outlines objectives and means of achieving stated objectives in order to earn a passing grade. ATHLTR 1899 Independent study can only be taken on a Pass/Fail basis
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

BIOENG 0050 - WORKSHOP IN BIOENGINEERING DESIGN

Minimum Credits: 1
Maximum Credits: 1
Students are introduced to Bioengineering design use of the SolidWorks software suite. SolidWorks is one of several computer aided engineering software packages (AutoCAD and ProEngineer are other examples) that is widely used in industry and academia. Skills learned 1) will help with Bioengineering design projects, and 2) are easily translated to other computer engineering packages such as AutoCAD or ProEngineer. The workshop consists of weekly SolidWorks-based practice assignments (tutorials) that must be completed to receive an 'S' (satisfactory) grade in the course. Course Objectives: Upon completing the course, the student should be able to use SolidWorks to develop professional quality engineering drawings and simulations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit
Course Requirements: PLAN: Bioengineering (BEH OR BSE)

BIOENG 0051 - WORKSHOP IN MEDICAL DEVICES- THE BASICS

Minimum Credits: 1
Maximum Credits: 1
"Reverse engineering" of medical devices is used to introduce students to basic terminology in the medical device field, the coupling of design with function, and the processes involved in moving from device conception to product. The course (1) emphasizes the significance of curiosity and information seeking in device development, (2) will help with Bioengineering design projects, and (3) will expand knowledge of devices in general, along with needs assessment. Multiple medical specialties will be covered, along with basic function of devices (diagnostics, treatment, monitoring, etc). The workshop will use "hands on" learning experiences, focusing on devices that can be taken apart. After discussion of device purpose and function, students will be challenged to identify potential design improvements. Students are expected to be active participants in the seminar. Course Objectives: Upon completing the course, the student should be conversant with medical device terminology, be able to state the basic elements involved in needs assessment, and be able to identify hurdles in medical device development.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit
Course Requirements: PLAN: Bioengineering (BSE)
BIOENG 0052 - WORKSHOP IN OPENSIM

Minimum Credits: 1
Maximum Credits: 1
Computational models and simulations are tremendously useful tools for understanding human movement control. It is not always straightforward to identify cause-and-effect relationships through experiments alone and computational modeling and simulation techniques can complement experimental approaches - e.g., models can provide estimates of important variables such as muscle forces that are difficult to measure experimentally. OpenSim is an open-source software package that enables users to build, exchange, and analyze computer models of the musculoskeletal system and dynamic simulations of movement (Delp et al., 2007). The purpose of this course is to introduce students to OpenSim by demonstrating the utility of graphics-based modeling and simulation. Specifically, students will learn how to use OpenSim tools, through both the graphical user interface (GUI) and Application Programming Interface (API) that uses Matlab scripting, to analyze and simulate models and motions. Course Objectives: Upon completing the course, the student should be able to use OpenSim to analyze and develop forward dynamic simulations of movement. The course consists of weekly practice assignments that must be completed to receive a satisfactory (S) grade.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: H/S/U Basis
Course Requirements: PLAN: Bioengineering

BIOENG 0053 - WORKSHOP IN STATISTICAL DESIGN

Minimum Credits: 1
Maximum Credits: 1
Engineers use experiments for a variety of reasons, some of which are: determine whether one treatment is better than an alternative; determine parameters in a descriptive model; and determine accurate physical properties of a material. Simply put, experiments take time and can be expensive. Statistical design of experiments (DOE) is a tool to maximize the amount of relevant information gained while minimizing the amount of experimentation required to obtain that information. After discussion of general experimental design principles, Design-Ease® software is used to introduce students to DOE through a series of workshops that highlight the importance of DOE in engineering practice. The course consists of weekly practice assignments that must be completed to receive a satisfactory (S) grade. Course Objectives: Upon completing the course, the student should be able to design an experiment using statistical design of experiment principles to maximize knowledge gained from the experiment.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: Satisfactory/No Credit
Course Requirements: PREQ: ENGR 0020; PLAN: Bioengineering

BIOENG 0054 - WORKSHOP IN DESIGN FOR MANUFACTURABILITY

Minimum Credits: 1
Maximum Credits: 1
Design for Manufacturability (DFM) provides a systematic methodology that can be used to analyze product design for improvements in assembly and manufacturing. Students will use DFM to redesign current products for changes in manufacture that lead to reduction in production cost and improved operability/customer satisfaction. Students will employ modern software tools that accurately model parts for specific manufacturing operations, model part costs, simplify products, find specific avenues to reduce manufacturing and assembly costs, benchmark products, and quantify improvements. Course Objectives: Students will gain hands-on experience incorporating the DFM concepts in a project. Upon completing the course, the students should be able to describe the utility of DFM in product development and early manufacturing design, be able to quantitatively evaluate the impact of design choices on manufacturing cost, and be able to use modern quality control concepts and approaches.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: Satisfactory/No Credit
Course Requirements: PREQ: BIOENG 0050 or MEMS 0024; PLAN: Bioengineering

BIOENG 0501 - MUSIC ENGINEERING

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: Swanson School of Engineering  

**BIOENG 1000 - STATISTICS FOR BIOENGINEERING**  
Minimum Credits: 4  
Maximum Credits: 4  
Bioengineering statistics will present the basic statistical methods that are relevant to engineering and clinical applications. Specifically, students will learn to consider the assumptions inherent to statistical analyses; calculate statistical parameters; automate statistical methods using software; interpret the meaning of statistical parameters; and design experiments conducive to proper statistics. Biological and medical examples will be used to reinforce concepts of the course.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: MATH 0230, PLAN: Bioengineering BSE  

**BIOENG 1002 - INTRAMURAL INTERNSHIP**  
Minimum Credits: 3  
Maximum Credits: 3  
Students employ practical experience, gained from mentored research in an academic environment, which includes project planning, design of experiments, and analysis of results to develop professional quality oral presentation skills. Emphasis is placed on critical analysis of research projects, development of technical abstract writing skills, and development of professional quality visual aids that accompany oral presentations. The course culminates with an oral presentation at a technical symposium. Upon completing the course, the student should be able to prepare a professional quality abstract documenting background, methodology, and results from a research project and make a professional quality oral presentation describing the research.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade  
Course Requirements: PREQ: ENGR 0020; PLAN: Bioengineering  

**BIOENG 1005 - RADIOFREQUENCY MEDICAL DEVICES**  
Minimum Credits: 3  
Maximum Credits: 3  
The course will cover topics related to the applications of electromagnetics and RF in medicine and in other devices that can cause thermal safety hazards. Topics such as Maxwell Equations, Wave Equations, Transmission Lines, Electromagnetic Theorems, Introduction to Antennas, and Introduction to Computational Electromagnetics will be presented. The class will include analyses of several RF devices used in medical applications and/or have electromagnetic safety implications such as magnetic resonance imaging (MRI), biological sensors (brain machine interface), RF ablation, and cell phones. Upon completing the course, the student should be able to describe how to apply fundamental electromagnetic principles to set up and solve problems in RF devices used in medical applications.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: BIOENG 1310 and BIOENG 1320; PLAN: Bioengineering (BSE or BEH)  

**BIOENG 1024 - MEDICAL PRODUCT DESIGN**  
Minimum Credits: 3  
Maximum Credits: 3  
This course has been designed to provide you an opportunity to learn the fundamentals of medical product design. The overarching goal of this course is to focus on the basics to support the medical product design process including ethnography, FDA Design Controls, sketching, prototyping,
and material and adhesive specification.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0011 or 0015 or 0711 or ET 0011; PLAN: BIOENG

BIOENG 1050 - ARTIFICIAL ORGANS

Minimum Credits: 3
Maximum Credits: 3
Artificial organs is the first of a three course sequence that explores design, development, and clinical use of artificial organ technology. Each course in the series is stand-alone and, as such, is not a prerequisite for any other course in the series. Students may take one, two, or all three courses. Artificial organs is directed toward artificial heart and vascular prostheses. The basic physiology of each system (heart and vascular) is reviewed with emphasis on identifying the bioengineering design requirements for appropriate organ replacement systems. Commercially available systems are analyzed from the point of view (where applicable) of mass transfer efficiency; biomechanics and hemodynamic similarity to the host; and size and efficiency of the device. Students will be required to design an artificial organ consistent with the above-mentioned considerations. Upon completing the course, the student should be able to describe the fundamental engineering principles related to heart and vascular physiology and apply the fundamental principles to design improvements and/or new designs for artificial heart and vascular prostheses.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1220; PLAN: Bioengineering (BEH OR BSE)

BIOENG 1051 - ARTIFICIAL ORGANS 2

Minimum Credits: 3
Maximum Credits: 3
Artificial organs 2 is the second of a three course sequence that explores design, development, and clinical use of artificial organ technology. Each course in the series is stand-alone and, as such, is not a prerequisite for any other course in the series. Students may take one, two, or all three courses. Artificial organs 2 is focused on artificial blood and artificial lung. The basic physiology of each system (blood and the lungs) is reviewed with emphasis on identifying the bioengineering design requirements for appropriate organ replacement systems. Commercially available systems are analyzed from the point of view (where applicable) of mass transfer efficiency; biomechanics and hemodynamic similarity to the host; and size and efficiency of the device. Students will be required to design an artificial organ consistent with the above-mentioned considerations. Upon completing the course, the student should be able to describe the fundamental engineering principles related to blood and lung physiology and apply the fundamental principles to design improvements and/or new designs for artificial blood substitutes and artificial lung devices.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1210; PLAN: Bioengineering (BSE or BEH)

BIOENG 1052 - ARTIFICIAL ORGANS 3

Minimum Credits: 3
Maximum Credits: 3
Artificial organs 3 is the third of a three course sequence that explores design, development, and clinical use of artificial organ technology. Each course in the series is stand-alone and, as such, is not a prerequisite for any other course in the series. Students may take one, two, or all three courses. Artificial organs 3 is focused upon artificial kidney and artificial liver. The basic physiology of each system (kidney and liver) is reviewed with emphasis on identifying the bioengineering design requirements for appropriate organ replacement systems. Commercially available systems are analyzed from the point of view (where applicable) of mass transfer efficiency; biomechanic and hemodynamic similarity to the host; and size and efficiency of the device. Students will be required to design an artificial organ consistent with the above-mentioned considerations. Upon completing the course, the student should be able to describe the fundamental engineering principles related to kidney and liver physiology and apply the fundamental principles to design improvements and/or new designs for artificial kidney and artificial liver.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1220; PLAN: Bioengineering (BSE or BEH)

**BIOENG 1070 - INTRODUCTORY CELL BIOLOGY 1**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- Principles of cell biology in higher organisms: structure, function, biosynthesis, and macromolecular organization with a focus on macromolecular organization and function from a quantitative systems perspective. Upon completing the two course sequence, BIOENG 1070 and BIOENG 1071, students should be able to (1) demonstrate understanding of the principles of cell structure and function, (2) describe the experimental tools used to understand cellular function such as molecular genetic techniques, biochemical analysis, and microscopy, and (3) use systems approaches to understand how cellular processes are integrated.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: ENGR 0012 or 0712 or 0715 or 0716 or (CREQ: ENGR 0016) or (PLAN: Bionengineering)

**BIOENG 1071 - INTRODUCTION TO CELL BIOLOGY 2**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- Continuation of BIOENG 1071. Principles of cell biology in higher organisms: structure, function, biosynthesis, and macromolecular organization with a focus on macromolecular organization and function from a quantitative systems perspective. Upon completing the two course sequence, BIOENG 1070 and BIOENG 1071, students should be able to (1) demonstrate understanding of the principles of cell structure and function, (2) describe the experimental tools used to understand cellular function such as molecular genetic techniques, biochemical analysis, and microscopy, and (3) use systems approaches to understand how cellular processes are integrated.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: BIOENG 1070; PROG: School of Engineering

**BIOENG 1072 - HONORS INTRODUCTORY CELL BIOLOGY 2**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- Principles of cell biology in higher organisms: structure, function, biosynthesis, and macromolecular organization with a focus on macromolecular organization and function from a quantitative systems perspective. This course is accompanied by a weekly one hour seminar in which original research articles pertinent to cell biology are presented and discussed.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: BIOENG 1070; PROG: Swanson School of Engineering

**BIOENG 1075 - INTRODUCTION TO CELL AND MOLECULAR BIOLOGY LABORATORY TECHNIQUES**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- An undergraduate laboratory course designed to complement theoretical knowledge learned in BIOENG 1070 & 1071 that covers practical aspects of fundamental cell biology, cell culture, visualization of cellular components, protein biochemistry (isolation, purification, and analysis), molecular upon completing the course, the student should have acquired 'hands-on' skills in basic techniques in cell biology, biochemistry and molecular biology and be able to apply them in practice. Biology techniques, and functional measurements in cells.

**Academic Career:** Undergraduate
**Course Component:** Lecture
BIOENG 1085 - INTRO TO BIOENGINEERING: SEMINAR

Minimum Credits: 0
Maximum Credits: 0
Seminar is designed to acquaint students with aspects of bioengineering that are not normally encountered in the classroom or extracurricular activity settings. As such, seminar is a vehicle to provide important information and communicate materials that students need to know to maximize their educational experience and develop post-graduation plans. Emphasis is placed on career planning and development and options available in the undergraduate program that will help realize post-graduation goals. Student awareness of opportunities that are available and knowledge about how to utilize the opportunities for their benefit.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

BIOENG 1086 - BIOENGINEERING SEM FOR MINORS

Minimum Credits: 0
Maximum Credits: 0
One hour lecture format by members of the bioengineering community of both the university of Pittsburgh and other institutions.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: H/S/U Basis

BIOENG 1095 - SPECIAL PROJECTS

Minimum Credits: 1
Maximum Credits: 6
Special Projects provides an opportunity for students to develop an individual research project under the guidance of a faculty member/mentor. Projects can involve laboratory research, engineering design, or instructional development. While the project must be related to bioengineering, the mentor can be a faculty member in any department or hospital affiliated with the University of Pittsburgh. A written report documenting the project and project outcomes is required. Typical report format (abstract, introduction, methods, results, discussion, and references) is expected. The length of the report should reflect the number of credits received. The report must be submitted to both the Undergraduate Coordinator, Department of Bioengineering, and the mentor. The mentor will evaluate the quality of the project and report and submit a letter grade recommendation to the Undergraduate Coordinator.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

BIOENG 1096 - UNDERGRADUATE TEACHING EXPERIENCE

Minimum Credits: 1
Maximum Credits: 2
Undergraduate Teaching Experience provides students an opportunity to volunteer as an Undergraduate Teaching Assistant (TA) or Grader. Undergraduates can participate in helping develop and deliver lecture content, managing recitations or laboratories, developing and/or grading quizzes, evaluating homeworks, and general review of course materials.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Satisfactory/No Credit
Course Requirements: PROG: Swanson School of Engineering

BIOENG 1150 - BIOENG METHODS AND APPLICATIONS
Bioengineering methods and applications uses laboratory experiences to illustrate principles taught in several bioengineering core classes. In addition to being exposed to particular laboratory skills for each of the experimental modules in the course, students are expected to practice previously developed skills in technical writing, creating tables and graphs, data analysis, and statistics to create professional quality laboratory reports that document each module. Upon completing the course, the student should be able to state and describe the basic components of a laboratory report and create well-written archival documents that reflect professional quality work.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ:(BIOENG 1071 or 1072) and 1220 and 1310 and 1630; Plan: Bioengineering (BSE or BEH)

**BIOENG 1160 - BIOENGINEERING DESIGN 1**

Minimum Credits: 3  
Maximum Credits: 3  
The two course sequence, bioengineering design 1 & 2, is a mentored opportunity for the student to synthesize and extend skills and knowledge acquired during the undergraduate education experience in design (or redesign) of a biomedical product or equivalent. Students are exposed to key facets of the medical product design process and the unique regulatory requirements for biomedical products. Student teams select a design project, conduct a market/reimbursement analysis, apply design process methodology, maintain a design history file, and create a prototype product. Students will be able to apply appropriate product design-related procedures and tools, maintain design history files, conduct preliminary market/reimbursement studies, and address regulatory affairs in developing a prototype biomedical product or equivalent.  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** LEVEL: Senior; PLAN: Bioengineering (BSE or BEH)

**BIOENG 1161 - BIOENGINEERING DESIGN 2**

Minimum Credits: 3  
Maximum Credits: 3  
The two course sequence, bioengineering design 1 & 2, is a mentored opportunity for the student to synthesize and extend skills and knowledge acquired during the undergraduate education experience in design (or redesign) of a biomedical product or equivalent. Students are exposed to key facets of the medical product design process and the unique regulatory requirements for biomedical products. Student teams select a design project, conduct a market/reimbursement analysis, apply design process methodology, maintain a design history file, and create a prototype product. Students will be able to apply appropriate product design-related procedures and tools, maintain design history files, conduct preliminary market/reimbursement studies, and address regulatory affairs in developing a prototype biomedical product or equivalent.  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BIOENG 1160 ; PLAN: Bioengineering (BSE or BEH)

**BIOENG 1210 - BIOENGINEERING THERMODYNAMICS**

Minimum Credits: 3  
Maximum Credits: 3  
Bio thermodynamics uses an interactive framework in the joint (student and instructor) exploration of thermodynamics as it applies on the biological cellular and systems level. At this most fundamental level, thermodynamics studies the flow of energy, interconversion of energy, maintenance of cellular function and information, and the processes necessary to sustain life itself. Upon completing the course, the student should be able to describe how the three laws of thermodynamics and entropy impact biological systems, and be able to apply fundamental thermodynamics principles to set up and solve problems in physiological systems.  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BIOENG 1070 and (MATH 0240 and 0290) and (PHYS 0175 or 0476); PLAN: Bioengineering (BSE or BEH)
BIOENG 1211 - HONORS BIOENGINEERING THERMODYNAMICS

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: MATH 0240 and MATH 0290 and BIOENG 1070 and (PHYS 0175 or PHYS 0476); PLAN: Bioengineering (BEH or BSE); LVL: So, Jr, Sr

BIOENG 1218 - EMERGING BIOMEDICAL TECHNOLOGIES

Minimum Credits: 3  
Maximum Credits: 3  
Emerging Biomedical Technologies is offered by Rehabilitation Science and cross-listed with Bioengineering. The purpose of this course is to provide the students with an understanding of stem cell biology, tissue engineering, and related applications involved in rehabilitation sciences and regenerative medicine. The course material is designed to aid students considering a future as researchers in biomedical sciences laboratories or biotechnology research and development. It will provide digests of the latest research technologies and clinical applications in these fields. Students will be encouraged to synthesize concepts aimed to test solutions and therapies to improve human health by use of modern biomedical technologies. The lecture and discussion format gives students a broad background and the opportunity to apply critical thinking skills to recent published findings. Students who satisfactorily complete the course should be able to: Describe the emergent life science technologies covered in the course, Describe the biology of stem cells, their unique characteristics, and uses as therapies for disease and injury, Describe different approaches used in gene and cell therapeutic strategies, Describe the complexity of ethical and legal issues involved in this line of biomedical research, Describe the process of moving research into the translational phase with sufficient knowledge of the processes of FDA approval of therapies, Demonstrate an ability to effectively search for, analyze and critique current scientific publications on stem cell biology, cell and gene therapy and tissue engineering, Synthesize concepts aimed to test solutions and therapies to improve human health by use of modern biotechnologies discussed in class  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Bioengineering; PREQ: BIOENG 1210

BIOENG 1220 - BIOTRANSPORT PHENOMENA

Minimum Credits: 3  
Maximum Credits: 3  
Biotransport Phenomena follows logically from BioThermodynamics (BIOENG 1210). While thermodynamics looks at systems in equilibrium, transport phenomena looks at systems disrupted from equilibrium. The fundamental principles of momentum, heat, and mass transfer are developed and illustrated through applications to practical and classical paradigms of transport in biological, physiological, and biomedical processes. Students are introduced to the use of conservation balances to describe microscopic and macroscopic properties of a system. Course Objectives: Upon completing the course, the student should be able to describe the fundamental principles pertaining to momentum, heat, and mass transport and apply the fundamental principles to set up and solve problems in physiological systems and design of medical devices.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: BIOENG 1210; PLAN: Bioengineering (BSE or BEH)

BIOENG 1241 - SOCIETAL, POLITICAL AND ETHICAL ISSUES IN BIOENGINEERING

Minimum Credits: 3  
Maximum Credits: 3  
Engineering, as a profession, has ethical obligations to society that go beyond the simple application of technology as learned in science and technology courses. Bioethics seeks to supplement technological aspects of bioengineering by engaging students in an analysis of the effects of bioengineering developments on society, focusing on safety of the public as a primary ethical concern. Students are educated on a variety of ethical tools that enable them to analyze fictional, yet realistic, cases. Students are evaluated individually, as well as in groups, with a particular focus on the
ethical issues related to their senior design projects (BIOENG 1160 & 1161). Upon completion of the course, students will be able to recognize, articulate, and resolve ethical issues within the arena of bioengineering.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: BIOENG 1160; PLAN: Bioengineering (BSE or BEH); LEVEL: Juniors

BIOENG 1255 - DYNAMIC SYSTEMS: PHYSIOLOGICAL PERSPECTIVE

Minimum Credits: 4
Maximum Credits: 4
A foundation of basic systems concepts is built through combining modeling of dynamic systems with physiological examples. Mathematical models of physiological systems are developed using a combination of systems understanding (analogous thinking, engineering synthesis and analysis, and integrative system approaches in solving problems) and bioengineering design (recognizing the potential applications of both engineering principles to biology and biological principles to engineering). These models are then used to address biological/clinical questions. Upon completing the course, the student should be able to: demonstrate skill and competence in methods of dynamic systems modeling through (a) building dynamic models of bioelectrical, biomechanical, biochemical, and physiological systems, (b) solving systems of equations representing dynamic models including analytical, numerical, and graphical software methods, (c) validating models including descriptive, predictive, and explanatory validation, and (d) applying models to scientific and engineering applications including analysis and synthesis relative to identification and simulation. Describe physiological processes in dynamic system terms.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (BIOSC 1250 or NROSCI 1250 or 1070 or NUR 0012) and BIOENG 1320; PLAN: Bioengineering (BSE)

BIOENG 1310 - LINEAR SYSTEMS AND ELECTRONICS I

Minimum Credits: 3
Maximum Credits: 3
Bioinstrumentation covers electronic circuit theory and the practical aspects of building electronic prototypes. The mathematics of complex exponentials and complex impedance are also covered. A series of projects are built by each student individually, using a system of student-owned electronics components and tools called the pittkit. The kit includes a special apparatus, the breadboard laboratory interface processor (blip) which each student constructs, and which acts as a logging voltmeter, a frequency meter, a logic analyzer, a waveform generator, and a pulse duration meter. The blip interfaces to any computer via a USB port, without requiring any special software to be installed on the computer. After completing the course, the student should be able to design and construct prototypes of useful, simple circuits, such as preamplifiers and signal conditioners for sensors, as well as use off-the-shelf modules to construct laboratory instrumentation. They should be able to describe applications to other linear systems such as those found in physiological systems with greater clarity from having worked with circuits.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0240 and (PHYS 0175 or 0476); PLAN: Bioengineering (BSE or BEH)

BIOENG 1320 - BIOLOGICAL SIGNALS AND SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
The theory and application of linear time-invariant (LTI) systems is explored, with emphasis on an appreciation of the description and analysis of biomedical signals and systems via LTI methods. After completing the course, the student should be able to state the properties of LTI systems; be able to test whether a system is LTI; know how to obtain, and interpret, the frequency response, impulse response, step response, and transfer function of a system. The student should also be able to demonstrate mastery of the mathematical skills of convolution and integral transform techniques.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1310 and MATH 0240 and MATH 0290; PLAN: Bioengineering (BSE or BEH)
BIOENG 1330 - BIOMEDICAL IMAGING

Minimum Credits: 3  
Maximum Credits: 3  
Biomedical imaging introduces the major imaging modalities (x-ray, cat-scan, MRI, ultrasound) used in clinical medicine and biomedical research, as well as the fundamentals of images, from a signals and systems standpoint. After completing the course, the student should be able to use imaging modalities to determine anatomical or physiological function and apply physics and signal processing in medical imaging for particular research applications.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: BIOENG 1320; PROG: Swanson School of Engineering

BIOENG 1340 - INTRODUCTION TO MEDICAL IMAGING AND IMAGE ANALYSIS

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to Medical Imaging and Image Analysis presents the physics of image formation as well as methods for tomographic image reconstruction for major medical imaging modalities, including X-ray Computed Tomography (CT) and Magnetic Resonance Imaging (MRI). Also introduced are fundamentals of digital image processing, with particular emphasis on medical applications, including basic techniques to enhance image quality, image de-noising, methods for extracting, classifying, and tracking features of and objects in images, etc. Students will learn how to implement these techniques in MATLAB (The MathWorks Inc., Natick, MA) to solve practical image processing problems. MATLAB exercises will demonstrate to students how filtering operations applied in the image domain or the Fourier domain affect medical images. In addition to these fundamentals, more advanced algorithmic approaches for image segmentation and image as well as point-cloud registration techniques will also be reviewed.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: MATH 0240 and 0290 and BIOENG 1320; PLAN: BIOENG

BIOENG 1351 - COMPUTER APPLICATIONS IN BIOENGINEERING

Minimum Credits: 3  
Maximum Credits: 3  
LabVIEW programming is taught in the context of real-world tasks that engineering students will likely encounter in future academic or industrial work. Practical applications of signal processing tools and software design specification development are especially relevant. The fundamentals of LabVIEW, data flow programming concepts, programming with graphical user interfaces, modular programming structures, and data acquisition and control concepts are covered. Course Objectives: Upon completing the course, students should be able to successfully implement a solution to basic engineering programming tasks using LabVIEW. Students should be able to identify and utilize open source and commercial software libraries to tackle more advanced design problems without coding from scratch. Students should be able to effectively use LabVIEW to solve real-world engineering computing problems.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: CS 0441 or (ENGR 0012 or 0712 or 0716); PLAN: Bioengineering(BSE, MN)

BIOENG 1370 - COMPUTATIONAL SIMULATION IN MEDICAL DEVICE DESIGN

Minimum Credits: 3  
Maximum Credits: 3  
Computational simulation is increasingly utilized as a method to assess the performance of medical devices. The course provides students with a hands on learning experience on how to use computational simulation in the modeling and design of medical devices. The course details the important steps in computational simulations from preprocessing to solution to post-processing and data presentation. Commercially available software programs are introduced and used to simulate a variety of physical phenomena (solid, fluid, transport) pertinent to medical device design.
Upon completing the course, the student should be able to simulate the solid, fluid, and transport phenomena that are useful in medical device design. Particular attention will be placed on avoiding common mistakes in the preprocessing and interpretation of computational results. Topics covered: geometry creation; discretization; appropriate assignment of material properties; solver management; error mitigation and debugging; postprocessing and data presentation; data interpretation; introduction to design optimization.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: MATH 0280; CREQ: BIOENG 1220 and 1630

**BIOENG 1383 - BIOMEDICAL OPTICAL MICROSCOPY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Optical imaging microscopy techniques have become essential tools to investigate biological processes and diagnose diseases at unprecedented cellular and molecular levels. Biomedical researchers have an increasingly important need both to understand the advantages and limitations of the various types of optical microscopy and to apply the appropriate microscopy technique to solve specific biomedical problems. Biomedical optical microscopy is a comprehensive exploration of the basic principles of optical microscopy and imaging techniques commonly used in biomedical research. Upon completion of the course, the student should be conversant in the basic principles of common optical imaging microscopy techniques, able to apply an optical microscopy technique to address biological questions, and able to perform basic quantitative image analysis.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (PHYS 0102 or 0106 or 0111 or 0175 or 0476 or 1306 or 1361) or BIOENG 1075; PLAN: Bioengineering (BSE or BEH)

**BIOENG 1533 - CONTROLLED DRUG DELIVERY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Controlled drug delivery explores the physics, chemistry, and material science rationale behind the engineering of controlled drug delivery systems, which stands as a 114 billion dollar industry. To this end, the course focuses on topics at the interface between chemical engineering and medicine, such as polymer chemistry, biomaterials, pharmacokinetics, and transport phenomena. Pertinent pharmaceutical examples that are discussed include: transdermal, aerosol, oral, gene, and targeted cellular delivery, with emphasis placed on fabrication considerations and the relevant physiological environment. Upon completing the course, the student should be able to state the constraints on material properties posed by the physiological environment; use the fundamentals of polymers, diffusion, degradation, modeling and pharmacokinetics to solve problems specific to controlled drug delivery; and demonstrate ability to search and summarize primary research literature, write a review article, and deliver a cohesive oral presentation.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (BIOSC 1000 or 1810 or CHEM 1810) and (BIOENG 1220); PLAN: Bioengineering (BSE or BEH)

**BIOENG 1580 - BIOMEDICAL APPLICATION OF SIGNAL PROCESSING**

**Minimum Credits:** 4  
**Maximum Credits:** 4  
The fundamentals of digital signal processing of time series are developed, via applied exercises and projects with a focus on medical and biological signal analysis and interpretation. Biomedical applications are selected from a variety of areas, such as cardiovascular, gait and balance, electrophysiological (EEG, EKG, ECOG, ETUPON completion of this course, students should be able to properly acquire data in digital form; perform standard methods of spectral analysis; implement and apply linear time-invariant discrete-time filters; and demonstrate basic skills in digital signal processing. C.) And neural signal processing, among others. Upon completion of this course, students should be able to properly acquire data in digital form; perform standard methods of spectral analysis; implement and apply linear time-invariant discrete-time filters; and demonstrate basic skills in digital signal processing.

**Academic Career:** Undergraduate  
**Course Component:** Lecture
BIOENG 1586 - QUANTITATIVE SYSTEMS NEUROSCIENCE

Minimum Credits: 3
Maximum Credits: 3

Systems neuroscience is the field that attempts to relate the activity of networks of neurons to perception, cognition, and behavior. This HONORS course examines major scientific results in systems neuroscience, and the computational principles of brain function they illustrate. Neuroscience topics include sensory transduction, visual processing, motor control, and neural prosthetics. Students learn to apply techniques from signals and systems, statistics, machine learning, information theory, and control theory to problems in neuroscience. Course format consists of interactive lectures, student-led discussions of important publications in neuroscience, guided analysis of neuroscience data, and designing an original set of experiments. Course Objectives: Upon completing the course, students will be able to: Describe organizing principles of brain function, from biological and theoretical perspectives; Apply statistics, signal processing, and machine learning techniques to the analysis of biological data sets; Design novel experiments, analyses, and data interpretation; Demonstrate critical evaluation of scientific and technical literature.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1320 and (ENGR 0012 or 0712 or 0716); PLAN: Bioengineering (BSE or BEH)

BIOENG 1620 - INTRODUCTION TO TISSUE ENGINEERING

Minimum Credits: 3
Maximum Credits: 3

Tissue engineering (TE) is defined as the development and manipulation of laboratory-grown molecules, cells, tissues, or organs to replace and/or support the function of injured body parts. TE is highly interdisciplinary and therefore crosses numerous engineering and medical specialties. The course introduces students to the fundamentals of TE and the biomaterials, cells and growth factors used in TE through consideration of cell and tissue biology, biomaterials, drug delivery, engineering methods and design, and clinical implementation. Specific applications include skin, nerve, bone, and soft tissue regeneration. Throughout the course ties are made between the topic of study and clinically relevant situations. Upon completing this course, students should be able to: describe basic principles behind human cell and tissue biology and cell; describe the general types of biomaterials used in tissue engineering; describe techniques utilized to design, fabricate, and functionally assess tissue engineering systems; and, apply the combined knowledge of tissue organization and tissue engineering strategies to design a unique, reasonable tissue engineering solution.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (BIOENG 1071 or 1072) and 1255 and 1320; PLAN: Bioengineering (BSE or BEH)

BIOENG 1630 - BIOMECHANICS 1-MECHANICAL PRINCIPLES BIOLOGICAL SYSTEMS

Minimum Credits: 3
Maximum Credits: 3

Biomechanics 1 is a first course in undergraduate biomechanics that applies and builds on the concepts of statics, dynamics, and mechanics of materials as applied to human activities and tissues. After briefly reviewing equilibrium concepts and free body diagrams as applied to the human body, principles from kinetics are used to develop dynamic descriptions of human motion. Finally, engineering concepts employed in description of the fundamental strength of materials are applied to biological tissues. After completion of the course, students should be able to describe the general characteristics and material properties for tissue and organs studied in the course, analyze the forces at a skeletal joint for various static and dynamic human activities, state and use the concepts of balance and stability in describing human motion, and compute the stresses and strains in biological tissues, given loading conditions and material properties.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0135; PLAN: Bioengineering (BSE or BEH)

BIOENG 1631 - BIOMECHANICS 2: INTRODUCTION TO BIODYNAMICS AND BIOSOLID MECHANICS
Modern biomechanics is an increasingly diverse field that encompasses the mechanics of the whole body, all the way down to the cellular and molecular levels. Students are introduced to fundamental concepts and techniques of biodynamics and bio solid mechanics which provide the basis for biomechanics 3 and 4. General approaches used in mechanics are introduced throughout the semester and applied in several laboratories. Upon completing the course, the student should be able to demonstrate recall of functional anatomy of musculoskeletal system perform inverse dynamic analyses describe the principles of basic muscle biomechanics perform analyses of deformable bodies (including viscoelastic materials) describe general experimental techniques for rigid and deformable body analyses.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1630; PROG: Swanson School of Engineering

BIOENG 1632 - BIOMECHANICS 3: BIODYNAMICS OF MOVEMENT

Minimum Credits: 3
Maximum Credits: 3

Biodynamics, the area of focus in biomechanics 3, is the study of large-scale movements in biologic systems. As such, the course focuses on the analysis of human movement, which is used in clinical and research settings to understand how various pathologies impact movement and how interventions can be implemented to aid those affected by movement disorders. We cover the fundamentals of biomechanics of human movement using mechanical modeling techniques. The major focus is kinematic analyses in three dimensions using matrix techniques. Some fundamentals of kinetics are covered as well, 2d and 3d inverse dynamics. Upon completing the course, the student should be able to describe basic methods of kinematic/kinetic analysis used in multi-link systems and be able to implement the methods in the analysis of human movement. Students should also be able to apply the methods to study common human movements, e.g. gait analyses, eye movement analyses, etc. Finally, students should be able to use the computer programming language, mat lab, to perform computations on kinematic data.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1631 and MATH 0280 and (ENGR 0012 or 0712 or 0716); PLAN: Bioengineering (BSE or BEH)

BIOENG 1633 - BIOMECHANICS 4 - BIOMECHANICS OF ORGANS, TISSUES, AND CELLS

Minimum Credits: 3
Maximum Credits: 3

Modern biomechanics is an increasingly diverse field that encompasses the mechanics of the whole human body, including all the way down to the cellular and molecular levels. Biomechanics 4 builds upon biomechanics fundamentals learned in BIOENG 1630 and BIOENG 1631 in building a comprehensive application of bio solid mechanics to describe the mechanical behavior of soft and hard biological tissues. The course provides fundamental concepts in the development and application of constitutive models, as well as a foundation for more advanced topics that are covered in graduate school. Mathematica (Wolfram Research, Inc.) Is used both in class and for assignments. Upon completing the course, the student should be able to formulate biomechanics constitutive models that describe soft and hard tissues and use Mathematica as a framework for exploring the impact of model parameters in the model description.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1631 and MATH 0280; PLAN: Bioengineering (BSE or BEH)

BIOENG 1680 - BIOMEDICAL APPLICATIONS OF CONTROL

Minimum Credits: 4
Maximum Credits: 4

The effect of feedback control on analysis and design is explored, with an emphasis on biological and physiological systems. Course Objectives:

Upon completing this course, students should be able to: Construct mathematical models of physiological systems; Analyze temporal dynamics of a physiological system using linear systems concepts; Characterize the effects of feedback and controller on system performance; Design linear controllers to meet desired system specifications.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1320; PLAN: Bioengineering (BSE)

**BIOENG 1810 - BIOMATERIALS AND BIOMCOMPATIBILITY**

Minimum Credits: 3  
Maximum Credits: 3  
Undergraduate students are introduced to an advanced understanding of biomaterials and the use of biomaterial in areas such as tissue engineering, artificial organs, and implantable devices. Throughout the course, ties are made between the topic of study and clinically relevant biomaterial performance. The course introduces various biomaterials, such as polymers, metals, and ceramics, with the focus on biomaterial synthesis, characterization, structure-property relationship and surface modification. Biocompatibility issues of biomaterials will be discussed from different aspects such as protein adsorption, foreign body reaction, immune and inflammatory response, and sterilization. Finally, examples of clinical applications are discussed. Upon completing the course, the student should be able to: state the basic principles behind human tissue response to artificial surface implantation, describe the general types of materials used in soft and hard tissue replacements, drug delivery devices, and extracorporeal devices, describe techniques utilized to control the physiologic response to artificial surfaces, and identify various design strategies and clinical applications of biomaterials.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOENG 1810; PLAN: Bioengineering (BSE or BEH)

**BIOENG 2024 - BIOENGINEERING SEM FOR PROF MS**

Minimum Credits: 0  
Maximum Credits: 0  
One hour lecture format by members of the bioengineering community of both the university of Pittsburgh and other institutions.

Academic Career: GRAD
Course Component: Seminar
Grade Component: Grad HSU

**BIOENG 2150 - MEDICAL PRODUCT IDEATION**

Minimum Credits: 3  
Maximum Credits: 3  
A didactic class that explores the principles and use of "ethnography" as a tool to observe and document clinical activity in order to draft a clear statement of a clinical problem in need of solution and methods for concept generation to identify potential solutions. Students will be able to describe and use ethnographical techniques in identifying workplace problems and be able to describe and use concept generation methods to develop potential solutions. Topics covered: ethnography in the workplace; group brainstorming; brain-writing; affinitization; morphological analysis; basic human factors design.

Academic Career: Graduate
Course Component: Lecture
Grade Component: Letter GRD
Course Requirements: PROG: Swanson School of Engineering

**BIOENG 2151 - MEDICAL PRODUCT DEVELOPMENT**

Minimum Credits: 3  
Maximum Credits: 3  
A didactic course that uses principles of system engineering, the stage-gate process for medical product development and engineering and business analysis principles to evaluate the commercial potential proposed medical devices to further develop feasible solutions to a clinical problem identified in BIOENG 2150. Students will demonstrate use of systems engineering techniques to prioritize a set of feasible device and/or system solutions and ability to use intellectual property (IP) tools to determine suitability for further development. Students will demonstrate use of course principles in development of a commercialization plan for a proposed medical product. Design controls required by fad and international bodies;
systems engineering methodologies; intellectual property (IP) and IP search tools; brief market analysis; size by region, growth, competition, barriers to entry, sustainable advantage; reimbursement issues for proposed medical device/system; basic financial analysis’ students will construct spreadsheets typically presented to senior business management. This will include estimates of costs, margins, break-even analysis, NPV, hurdle rates, ROI, IRR; codes, standards, and regulatory processes (FDA, IEC & ISO, UL, ministry of health (Japan), NRC, BRH, notified bodies, obtaining broad indications for use); safety, reliability, product liability considerations, manufacturability considerations (DFM ‘design for manufacture, workflows)

Academic Career: Graduate
Course Component: Lecture
Grade Component: Letter GRD
Course Requirements: PREQ: BIOENG 2150; PROG: Swanson School of Engineering

ENGR 2811 - HACKING FOR DEFENSE

Minimum Credits: 3
Maximum Credits: 3
This course will teach students how to build products and services using lean methods. This will be done by solving real-world military and intelligence community problems. The course uses the lean launchpad platform for entrepreneurship. This is a highly customer-centered hypothesis-test approach to developing a mission modes, and is particularly well-suited for technology startups. It incorporates customer needs and user testing to build a minimum viable prototype. At the conclusion of the course, students will be able to understand the problems/needs of searching for product-market fit; understand all the stakeholders, deployment issues, costs, resources, and ultimate mission value; deliver minimum viable products that match customer needs in an extremely short time; produce a repeatable model that can be used to launch other potential technology solutions.

Academic Career: Graduate
Course Component: Lecture
Grade Component: Letter GRD

BIOSC 0041 - ANATOMY FOR THE HEALTH PROFESSIONS

Minimum Credits: 3
Maximum Credits: 3
This lecture course is designed to meet anatomy pre-requisites for students who are applying for admission to health profession programs but does not count towards any of the majors in biological sciences. Students will explore human functional and clinical gross anatomy organized by body region. Imaging techniques, disease pathologies, and case studies are utilized to enhance and apply lecture information. Co-enrollment with BIOSC 0042 is required.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: BIOSC 0042 (Min Grade ‘C’); PLAN: BIOSC Majors

BIOSC 0042 - ANATOMY FOR THE HEALTH PROFESSIONS LABORATORY

Minimum Credits: 1
Maximum Credits: 1
This laboratory course is designed to meet anatomy pre-requisites for students who are applying for admission to health profession programs but does not count towards any of the majors in biological sciences. This laboratory provides a visual opportunity to learn human anatomy through various tools, including skeletons, organ models, pathology specimens, virtual dissection, and histology slides. Lab modules are organized by body region. Co-enrollment with BIOSC 0041 is required.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: BIOSC 0041 (Min Grade ‘C’); PLAN: BIOSC Majors

BIOSC 0050 - FOUNDATIONS OF BIOLOGY LABORATORY 1
Minimum Credits: 1
Maximum Credits: 1
This is the first course in a two-course sequence on the study of organisms in the laboratory and the field. We will work with techniques that are important in biology and apply these techniques to illustrate basic biological principles, with an emphasis on living organisms. The laboratory exercises focus on cell structure and function, basic cellular processes, plant structure and function, and basic animal anatomy and physiology.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0150 or 0715 or 0170 or 0190 or BIOL 0101 or 0110 (MIN GRADE: 'C' for all courses listed) or CREQ: BIOENG 1070

BIOSC 0057 - FOUNDATIONS OF BIOLOGY RESEARCH LABORATORY 1

Minimum Credits: 1
Maximum Credits: 1
This course is designed to introduce biology as an experimental science and attempts to expose the student to some basic concepts and laboratory techniques in a more challenging fashion and in greater depth than BIOSC 0050. BIOSC 0057 provides a foundation for future laboratory courses and work in biology.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: BIOENG 1070; PREQ: (BIOSC 0150 or 0170 or 0715 or 0190) or (BIOL 0101 or 0110); Min Grade 'C'

BIOSC 0058 - FOUNDATIONS OF BIOLOGY SEA-PHAGES LABORATORY 1

Minimum Credits: 1
Maximum Credits: 1
This research-focused version of BIOSC 0050 uses bacteriophage discovery to introduce biology as an experimental science. Students learn current laboratory techniques through discovery, isolation, and characterization of their own novel virus. Students will be introduced to concepts in microbiology, evolution, and molecular biology through hands-on experiments driven by results obtained during class. This course is the first half of a two-part course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LEVEL: Freshman or Sophomore

BIOSC 0060 - FOUNDATIONS OF BIOLOGY LABORATORY 2

Minimum Credits: 1
Maximum Credits: 1
This one-credit laboratory course is the second in a two-course sequence designed to be an introduction to scientific inquiry in the biological sciences for majors in biology and related fields. You will use genetics, biochemistry, and molecular biology to undertake authentic research exploring the evolution of metabolic pathways in different species.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0050 or 0057 or 0058 or 0070 or 0190 or BIOL 0101 or 0111) and (BIOSC 0160 or 0716 or 0180 or BIOL 0102 or 0120); Min Grade 'C'

BIOSC 0067 - FOUNDATIONS OF BIOLOGY RESEARCH LABORATORY 2

Minimum Credits: 1
Maximum Credits: 1
This research-focused version of BIOSC 0060 uses real research projects to introduce biology as an experimental science. Students learn current
laboratory techniques through an inquiry-based project or set of projects throughout the semester. Experiments can focus on genetics, molecular biology, evolution, and ecology.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0050 or 0057 or 0058 or 0070 or 0190 or BIOL 0101 or 0111) and (BIOSC 0160 or 0180 or 0716 or BIOL 0102 or 0120); Min Grade 'C'

BIOSC 0068 - FOUNDATIONS OF BIOLOGY SEA-PHAGES LABORATORY 2

Minimum Credits: 1
Maximum Credits: 1
This research-focused version of BIOSC 0060 uses bacteriophage genomics to introduce biology as an experimental science. Students learn current computational biological techniques through annotation and characterization of novel viral genomes. Students will be introduced to concepts in bioinformatics, microbiology, evolution, and molecular biology through hands-on experiments driven by results obtained during class. This course is the second half of a two-part course.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0058; Min Grade 'C'

BIOSC 0100 - PREPARATION FOR BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course is intended for students who have not had high school biology in the past five years. The course is also highly recommended for students who have not completed algebra. The lecture will over a subset of topics from foundations of biology 1 and 2, including a discussion of basic chemistry used in biology, cell biology including mitosis and meiosis, human anatomy and physiology, and an introduction to genetics. The weekly recitations will explore topics covered in lecture in more depth and integrate problem solving and study skills. Some laboratory exercises will be included in the recitation period to re-enforce the lecture topics by giving students the opportunity to investigate the experimental aspect of biology. The laboratory exercises and assignments will focus on basic math and writing skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

BIOSC 0150 - FOUNDATIONS OF BIOLOGY 1

Minimum Credits: 3
Maximum Credits: 3
This introductory course in biology is divided into two parts. The first part covers the cellular basis of life including a discussion of simple chemistry; cells as units of structure and function; and energy transformations. The second part includes an examination of those functions common to all organisms such as nutrition, gas and fluid transport, and hormonal and neuronal control. Throughout, the emphasis is on the mechanisms used to accomplish these basic functions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

BIOSC 0160 - FOUNDATIONS OF BIOLOGY 2

Minimum Credits: 3
Maximum Credits: 3
This introductory course covers the basic principles of genetics, evolution, and ecology. Emphasis will be placed on the experimental and observational basis for our knowledge of these subjects.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0150 or 0715 or 0170 or 0190) or (BIOL 0101 or 0110); Min Grade 'C'

**BIOSC 0190 - DISCOVERING LIFE: AN INTRODUCTION TO THE BIOLOGICAL WORLD 1**

Minimum Credits: 4
Maximum Credits: 4
This introductory biology course integrates lab and lecture and is recommended to those students interested in pursuing research in the biological sciences and/or in building problem solving and data analysis skills. Lectures cover macromolecule structure and function, energy and metabolism, and histology and physiology of select organ systems. Labs expose students to cutting-edge research methods and are run by the same instructors that teach the lecture portion of the course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: LVL: Fr

**BIOSC 0191 - DISCOVERING LIFE: AN INTRODUCTION TO THE BIOLOGICAL WORLD 2**

Minimum Credits: 4
Maximum Credits: 4
This introductory biology course integrates lab and lecture and is recommended to those students interested in pursuing research in the biological sciences and/or in building problem solving and data analysis skills. Lectures cover genetics, development, ecology, and evolution. Labs expose students to cutting-edge research methods and are run by the same instructors that teach the lecture portion of the course. This course is equivalent to BIOSC 0160/0060 or BIOSC 0716/0060.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BIOSC 0190; Min Grade 'C'

**BIOSC 0200 - TEACHING BIOLOGICAL SCIENCES**

Minimum Credits: 1
Maximum Credits: 3
Teaching biology is a complex and multi-faceted challenge. It requires the integration of deep disciplinary knowledge with a functional understanding of learning theory and the development of practical skills for working with students. Teaching biological sciences is designed to help you explore multiple strategies for effective teaching and learning and refine your own understanding of biology through efforts to become a better science communicator. The course has both seminar and project based components. You are encouraged to coordinate your work in this course with existing teaching opportunities but this is not required.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0716 or 0191 or 0180) or (BIOL 0102 or 0120); Min Grade 'C'

**BIOSC 0350 - GENETICS**

Minimum Credits: 3
Maximum Credits: 3
This course is designed to examine the gene in the following dimensions: the gene as a unit of transmission, a unit of function, and a unit of mutation. In addition, the distribution and activity of genes in populations will be considered in the context of current theories of evolution.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0716 or 0191 or 0180) or (BIOENG 1071 or 1072) or (BIOL 0102 or 0120) and (CHEM 0120 or 0720 or 0770 or 0970 or 0102 or 0112 and 0114); Min Grade 'C'

BIOSC 0351 - GENETICS LABORATORY

Minimum Credits: 1
Maximum Credits: 1
Laboratory exercises designed to illustrate the major principles of genetics.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0060 or 0067 or 0068 or 0191 or 0080 or BIOL 0102 or 0121); Min Grade 'C'; CREQ: (BIOSC 0350 or 0355 or BIOL 0350 or 0203); Min Grade 'C'

BIOSC 0355 - UHC GENETICS

Minimum Credits: 4
Maximum Credits: 4
This course is designed to examine the gene as a unit of transmission, a unit of function, and a unit of mutation. The course emphasizes the relationship between classical mendelian genetics and the modern molecular understanding of gene structure and function. Recitations are used for weekly problem sets and discussion of exercises in the virtual flylab, an internet-based simulation of genetic experiments with the fruit fly drosophila melanogaster.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL (0102 or 0120)] and [CHEM 0120 or 0720 or 0102 or (0112 and 0114)]; Min Grade 'C' for all classes listed.

BIOSC 0370 - ECOLOGY

Minimum Credits: 3
Maximum Credits: 3
The objective of the course is to provide a broad introduction to the study of ecology at the undergraduate level, through the presentation of lectures dealing with organismal, population, community, and ecosystem levels of hierarchical organization. The contributions of laboratory and field investigations to the development of ecological knowledge will be considered.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120); Min Grade 'C' for all classes listed.

BIOSC 0390 - ECOLOGY LABORATORY

Minimum Credits: 1
Maximum Credits: 1
The objective of the laboratory course is to provide students with practical experience in ecological methods and in the design, conduct, and analysis of ecological studies. Laboratory exercises are designed to correspond with major lecture topics presented in BIOSC 0370. Exercises will include laboratory and field studies.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0067 or 0068 or 0080 or 0191 or BIOL 0102 or 0121; CREQ: BIOSC 0370 or 0371 or BIOL 1430 or 1515; Min Grade 'C' for all classes listed.

BIOSC 0391 - ECOLOGY LABORATORY WRITING PRACTICUM
Minimum Credits: 1
Maximum Credits: 1
Course is a writing practicum for ecology laboratory, BIOSC 0390. Students will prepare laboratory reports and write essays based on exercises and assignments for the companion course, BIOSC 0390. The reports and essays will be returned with instructor comments for student revision and resubmission.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102 or ENGR 0012; CREQ: BIOSC 0390; PLAN: Ecology and Evolution (BS)

**BIOSC 0715 - UHC FOUNDATIONS OF BIOLOGY 1**

Minimum Credits: 3
Maximum Credits: 3
This course covers biological phenomena at the cellular level: macromolecules, cell structure, photosynthesis, cell respiration, homeostasis, signaling and genetics. The experimental basis supporting our understanding of these processes will be introduced.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: MIN CUM GPA: 3.25 or Advanced Placement Biology Test Score equal/greater 4 or International Baccalaureate Biology Score equal/greater 5

**BIOSC 0716 - UHC FOUNDATIONS OF BIOLOGY 2**

Minimum Credits: 3
Maximum Credits: 3
This course will cover the cell cycle, DNA replication, transcription, translation, molecular biology, biotechnology, genomics and bioinformatics, plant development, and animal development. The experimental basis supporting our understanding of these processes will be introduced.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0715 (MIN GRADE: 'C') or Advanced Placement Biology Test Score equal/greater 5 or International Baccalaureate Biology Score equal/greater 7; MIN CUM GPA: 3.25

**BIOSC 0740 - YELLOWSTONE FIELD COURSE**

Minimum Credits: 4
Maximum Credits: 4
The honors program of the University of Pittsburgh, in conjunction with the Department of BIOSC, has developed a summer field course in ecology which will be held in and adjacent to the yellow stone region of Wyoming and Montana. Field study opportunities will be emphasized and will comprise approximately 50% of the student contact hours.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**BIOSC 0805 - THE HUMAN BODY**

Minimum Credits: 3
Maximum Credits: 3
This is a course in human biology and physiology for students not majoring in biology. The goal is to provide students with an understanding of fundamental principles of life with an emphasis on the human body. The course will cover basic biochemistry and cell biology and then move to the structure and function of human organ systems. An essential part of the course is discussion of current issues, such as infectious, autoimmune and neurodegenerative diseases; asthma and allergy; nutrition and health; stem cells research and cloning; and methods of contraception and reproductive
At an ever-increasing pace, issues of biological relevance are confronting the citizenry of this country and the world. Ranging from personal through political to global, these issues require that individuals have at least a rudimentary knowledge of basic biological phenomena in order to make informed decisions. The major goal of this course, together with its companion, BIOSC 0800, is to provide students (citizens) with the intellectual tools needed to approach these issues as they arise.

This course is designed to give students not majoring in biology the essential background in genetics and evolution to understand human disease. The material covered includes the fundamental principles of genetics, the role of genes and environment in various diseases, genomics, and the role of evolution. An essential part of the course is the discussion of current issues, such as genetic diseases, genetic screening, reproductive cloning, gene therapy, genetic basis of cancer, and emerging and reemerging diseases.

A major topic in biology will be developed and explored by students.

This course is designed to provide students with a basic understanding of the principles and underlying themes of modern biochemistry. The course includes all the major topics in biochemistry in considerable depth including thermodynamics and enzymology, protein and nucleic acid structure, function, and synthesis, lipids and membranes as well as metabolic pathways. This course will require that you master a new vocabulary including chemical structures, and there is an emphasis throughout on experimental approaches, molecular mechanisms, and problem solving. Although the same topics will be covered as in the two semester biochemistry series (BIOSC 1810-1820), no one topic in BIOSC 1000 will be covered in as much detail.
BIOSC 1005 - INTRODUCTION TO BIOCHEMISTRY LAB

Minimum Credits: 1
Maximum Credits: 1
This course will guide students through a common experimental approach that is used in academic and industry research labs. In the first part of the semester, students will clone genes that have been selected because they are new genes of interest to research labs within the department. In the second part of the semester, students will express their cloned genes and purify the encoded proteins. They will use computer analysis to predict possible functions of their proteins and then test their hypotheses using biochemical techniques.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0060 or 0067 or 0068 or 0080 or 0191) or (BIOL 0102 or 0121); CREQ: BIOSC 1000; Min Grade 'C' for all courses listed

BIOSC 1010 - COMMUNICATING IN THE BIOLOGICAL SCIENCES

Minimum Credits: 2
Maximum Credits: 2
Conventions of scientific communication will be taught in this junior/senior level course as students research, write and revise a position article and oral presentation about a biological controversy. Students will learn to locate information from peer-reviewed scientific literature in electronic databases. Through peer review exercises, students will develop evaluation skills and learn to incorporate feedback. Document design, argument construction, and readability will be taught and practiced with the goal of producing a clear and concise written document and oral presentation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0350 or 0355 or 0370 or 0371 or 1000 or 1810 or 1130) or (BIOL 0203 or 0350 or 1430 or 1515); Min Grad 'C'; and (ENG CMP 0004 or 0006 or 0020 or 0200 or 0203 or 0205 or 0207 or 0208 or 0250) or (FP 0003 or 0006) or (ENG 0102 or ENGR 0012); LVL: Jr or Sr; PLAN: BIOSC-BS

BIOSC 1070 - HUMAN PHYSIOLOGY-UHC

Minimum Credits: 4
Maximum Credits: 4
After a general introduction on cell biology, muscle physiology, and intracellular communication, this course will examine the function of the following systems: cardiovascular, respiratory, renal, gastrointestinal and immune. The systems will be considered in the context of the function of the body as a whole, and how they respond during challenges (e.g. exercise) and pathological states. Current research related to the functioning of these systems will be emphasized throughout the course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0716 or 0191 or 0180) or (BIOL 0102 or 0120) or (BIOENG 1071 or 1072) and [CHEM 0120 or 0720 or 0770 or 0970 or 0102 or (0112 and 0114)]; Min Grade 'C' for all courses listed

BIOSC 1080 - HUMAN ANATOMY AND PHYSIOLOGY

Minimum Credits: 6
Maximum Credits: 6
This course is an introduction to the study of human structure and function. We will take a systems approach to study the anatomy of the human body and its normal function and maintenance. Each system will be examined from the perspective of development, tissue structure, adult anatomy and physiology. Lectures will assume that the student has had the equivalent of a major's level college course in introductory biology and introductory chemistry.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
**Course Requirements:** PREQ: (BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120) and [CHEM 0120 or 0720 or 0101 or (0112 and 0114)]; Min Grade 'C' for all courses listed

**BIOSC 1120 - BIOSTATISTICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course provides students the knowledge on applications of statistical technique to biological problems. The data fit, regression analysis, significance of correlation coefficient and of standard error of estimate will be discussed. The binomial, normal, and Poisson distributions, the student's t-distribution and the chi-squared distribution will be introduced. Hypothesis testing, significance levels, confidence limits for large and small samples and non-para metric statistics will be covered. Basic computer programming (use of BMDP and statview) will be introduced.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120) and [CHEM 0120 or 0720 or 0101 or (0112 and 0114)]; Min Grade 'C' for all courses

**BIOSC 1130 - EVOLUTION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is an introduction to biological evolution. The theory, process and pattern of evolutionary change are presented. This course will encompass both micro evolutionary and macro evolutionary concepts. Lecture topics will include inheritance and variation, population genetics, natural selection, speciation, adaptation, the fossil record, and phylogenetic.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120) and [CHEM 0120 or 0720 or 0101 or (0112 and 0114)]; Min Grade 'C' for all courses

**BIOSC 1140 - BEHAVIORAL ECOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Behavior is studied from an evolutionary perspective. Current models of foraging, mating, and social behavior are evaluated through classroom and field work.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: BIOSC 0350 or 0355 or BIOL 0203 or 0350; Min Grade 'C' for all courses listed

**BIOSC 1160 - FOREST ECOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Study of environmental factors and their influence on reproduction, growth, and development of individual trees and forest stands. Provides the biological basis for forest resources management.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

**BIOSC 1170 - FRESHWATER ECOLOGY**
A field-oriented study of lakes, reservoirs, and streams as dynamic systems. Emphasis will be placed on the use of quantitative sampling and analytical techniques.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

**BIOSC 1180 - ECOLOGY OF AMPHIBIANS AND REPTILES**

Minimum Credits: 3
Maximum Credits: 3
This course will include the ecology, evaluation, identification techniques, habitats, and life histories of amphibians and reptiles. While emphasis will be on the amphibians and reptiles of western Pennsylvania, those species occurring in the bordering states of Ohio, New York, and west Virginia will also be studied.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0180 or 0191 or 0716 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

**BIOSC 1190 - AQUATIC ENTOMOLOGY**

Minimum Credits: 3
Maximum Credits: 3
An introduction to aquatic insects. Subjects emphasized will include ecology, morphology, evolution, habitats, and identification. Field and laboratory experiences will be supplemented with lectures and selected readings.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0180 or 0191 or 0716 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

**BIOSC 1200 - VERTEBRATE MORPHOLOGY**

Minimum Credits: 3
Maximum Credits: 3
A study of the gross anatomy, histology, development, and evolution of the vertebrate body. Topics: vertebrate origin, phylogeny, and classification; basic histology; early embryology; evolutionary morphology; integument; skeletal system; muscular system; sense organs; nervous system; endocrine system; body cavity and mesenteries; digestive system; respiratory system; circulatory system; excretory system; reproductive system. Each system is examined in terms of its embryonic development, histology, functional anatomy, and evolutionary history. General principles of evolutionary morphology are emphasized. The purpose of the course is to provide an understanding of the history and functional anatomy of the body. It is designed as a background for studies in embryology, physiology, systematics, and human anatomy and physiology in professional schools.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

**BIOSC 1205 - VERTEBRATE MORPHOLOGY LAB**

Minimum Credits: 1
Maximum Credits: 1
This is a laboratory to accompany BIOSC 1200. Students will dissect a shark and a cat, study various skeletons, and examine histology slides. The purposes of the course are to illustrate the structures discussed in the BIOSC 1200 lectures and to give the student the personal experience of learning animal structure through dissection and observation.
BIOSC 1210 - VERTEBRATE MORPHOLOGY LABORATORY

Minimum Credits: 2
Maximum Credits: 2
This is a laboratory to accompany BIOSC 1200. Students will dissect a shark and a cat, study various skeletons (including human), and examine histology slides. The purposes of the course are to illustrate the structures discussed in the BIOSC 1200 lectures, and to give the student the personal experience of learning animal structure through dissection and observation.

BIOSC 1220 - ECOLOGICAL FIELD STUDIES

Minimum Credits: 3
Maximum Credits: 3
This course provides extensive field experience for undergraduates and will focus on developing the skills necessary for any practicing ecologist. Students will be involved in all stages of field projects including both individual and group exercises. Using a combination of lecture, extensive readings from the primary literature and hands-on field projects, the instructor will assist the students in gaining a proficiency with the background knowledge, thinking skills and technological tools necessary to conduct empirical ecological investigations.

BIOSC 1230 - ORNITHOLOGY

Minimum Credits: 3
Maximum Credits: 3
The study of birds with a field-oriented emphasis revolving around the late spring migrants and the breeding species in a wide variety of habitats. Classroom topics will include study skins, nests, eggs, and the annual cycle.

BIOSC 1250 - HUMAN PHYSIOLOGY

Minimum Credits: 3
Maximum Credits: 3
After a general introduction on cell biology, physiology of nerves and muscle, and intercellular communication, this course will survey the function of the following systems: cardiovascular, respiratory, renal, and gastrointestinal. Each system discussed will be integrated into the larger function of homeostatic and their adaptation during pathology and challenges (e.g., exercise).
BIOSC 1255 - PHYSIOLOGY LABORATORY

Minimum Credits: 1  
Maximum Credits: 1  
This laboratory course complements BIOSC 1250 human physiology. Students will spend the first half of the semester developing their skills by measuring homeostatic parameters of the human body (blood pressure, blood chemistry, muscle response, etc.). They will then use that knowledge to design and perform experiments modeled after conditions of both eustress (exercise) and distress (disease). In addition to weekly assignments, students will be required to present the results of their research projects.

Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (BIOSC 0060 or 0067 or 0068 or 0191 or 0080) or (BIOL 0102 or 0121); (MIN GRADE 'C' for listed courses); CREQ: (BIOSC 1250 or 1070 or 1080) or (NROSC 1070 or 1250)

BIOSC 1270 - ECOLOGY OF FISH

Minimum Credits: 3  
Maximum Credits: 3  
A field course dealing with the interrelationships of fish and the biotic and abiotic environment. Improvements of aquatic habitat and applied aspects of the ecology of fish and fishery biology will be studied.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (BIOSC 0160 or 0180 or 0191 or 0716) or (BIOL 0102 or 0120); Min Grade ‘C’ for all courses listed

BIOSC 1275 - GENOMICS

Minimum Credits: 3  
Maximum Credits: 3  
The sequencing of the human genome has revolutionized the way in which we think about diverse biological topics. This course will explore how advances in our understanding of such subjects have been made possible by innovative sequencing technologies. This course will combine lecture, roundtable discussions and group presentations to explore how such technologies have allowed scientists to analyze genome-wide correlations between species to ultimately provide deeper insight into genome structure and function, the evolution of genomes, and the greater roles of genome analysis and editing in modern medicine.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (BIOSC 0350 or 0355) or (BIOL 0203 or 0350); MIN GRADE ‘C’ for all courses

BIOSC 1280 - MICROBIAL GENETIC ENGINEERING

Minimum Credits: 3  
Maximum Credits: 3  
This course will consist of a series of lectures discussing the molecular genetics of prokaryotic and eukaryotic microbes and ways in which they can be genetically engineered. It includes: (1) the genome structures of microbes, (2) classic methods for genetic exchange, (3) current approaches to genetic engineering, (4) applications of genetic engineering to human disease. Visits to the computer lab will introduce web-based analysis of microbial genome sequences.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: BIOSC 1850 and (BIOSC 0350 or BIOSC 0355 or BIOL 0350 or BIOL 0203); Min Grade ‘C’ for all courses listed

BIOSC 1285 - GENOMICS LABORATORY
BIOSC 1290 - EXPERIMENTAL GENETIC ENGINEERING LABORATORY

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0060 or 0067 or 0068 or 0191 or 0080 or BIOL 0102 or 0121) and (BIOSC 0350 or 0355 or BIOL 0203 or 0350); PROG: School of Arts and Sciences (UA-S); Min Grade 'C' for all courses listed

This is a laboratory course focusing on the genetic engineering of prokaryotic and eukaryotic microbes. During this course, students will isolate novel mutants of a specific microbe and employ both traditional genetic approaches and current methods in molecular microbiology to clone, characterize and sequence the mutant alleles.

BIOSC 1291 - EXPERIMENTAL GENETIC ENGINEERING WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 1855 or 1860) and (BIOSC 0350 or BIOSC 0355 or BIOL 1315 or BIOL 0350); Min Grade 'C' for all courses listed

This course is a writing practicum for experimental genetic engineering. Students will write three short laboratory reports based on work done in the corequisite course BIOSC 1290, and revise these, based on instructor comments, to form a final integrated paper.

BIOSC 1310 - WETLAND ECOLOGY AND MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0180 or 0191 or 0716) or (BIOL 0102 or 0120); Min Grade 'C' for all courses listed

This is a course in the scientific study of the distribution and abundances of animal and plant populations. The course will begin with the dynamics of single populations, emphasizing demography, exponential growth, and intra-specific competition. Next we will cover interactions between populations, especially competition and predation. Finally we will consider the implications of population dynamics to the evolution of life history strategies, to population regulation, and to community structure. Throughout, empirical studies of natural and laboratory populations will be used to test mathematical models of population processes.

BIOSC 1320 - POPULATION BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture

This is a course in the scientific study of the distribution and abundances of animal and plant populations. The course will begin with the dynamics of single populations, emphasizing demography, exponential growth, and intra-specific competition. Next we will cover interactions between populations, especially competition and predation. Finally we will consider the implications of population dynamics to the evolution of life history strategies, to population regulation, and to community structure. Throughout, empirical studies of natural and laboratory populations will be used to test mathematical models of population processes.
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0370 or 0371 or BIOL 1430 or 1515; Min Grade 'C' for all courses listed

BIOSC 1330 - FIELD BOTANY

Minimum Credits: 3
Maximum Credits: 3
Identification of native herbaceous and woody plants in terrestrial communities and the methods of quantifying their relative numbers, mass, and ecological relationships.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

BIOSC 1340 - FIELD ENTOMOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course is offered at the Pymatuning laboratory of ecology field station. An introduction to the amazing taxonomic and ecological diversity of insects and their close relatives in the phylum Arthropoda. Emphasis will be placed on the collection and identification of the adult stages. Field and laboratory exercises will be supplemented with lectures and selected readings.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

BIOSC 1350 - PLANT BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course will present an in-depth discussion of plant structure, function, and development in an ecological and evolutionary context. In addition, this course will survey the plant kingdom and related taxa with a focus on the evolution of these groups.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

BIOSC 1360 - ECOLOGY OF FUNGI

Minimum Credits: 3
Maximum Credits: 3
A survey of the fungi and their interrelationships with abiotic and biotic factors in the environment. Adaptations will be studied in the field of laboratory using both aquatic and terrestrial fungi. Special emphasis will be placed on identification of the larger basidiomycetes (mushrooms).
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 180 or 0191 or 0180 or BIOL 0102 or 0120; Min Grade 'C' for all courses listed

BIOSC 1375 - TROPICAL BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course will provide an introduction to ecological and evolutionary studies of living organisms in the tropics. The course will focus on major themes in ecology and evolution as they play out in the tropics, the most biodiverse region of the globe.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0180 or 0191 or BIOL 0102 or 0120 (MIN GRADE 'C')

BIOSC 1380 - GLOBAL ECOLOGY

Minimum Credits: 3
Maximum Credits: 3
Compelling evidence points to the 1990's as the decade of environmental crisis. Human quality of life, and probably survival, likely depends more on treaties about land, air, and water than on weaponry. This course will examine environmental issues of the decade and the basic concepts of the fundamental environmental science - ecology - that underlie them. The nature of key environmental changes, their extent and rates, will be considered, along with likely consequences and possible solutions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0180 or 0191 or 0716) or (BIOL 0102 or 0120) (MIN GRADE 'C')

BIOSC 1390 - FIELD TECHNIQUES IN ECOLOGY AND CONSERVATION

Minimum Credits: 3
Maximum Credits: 3
This course introduces a variety of field and research techniques used in ecology and conservation, including experimental design, sampling design, and techniques in sampling plants and animals in forests, fields, and aquatic habitats. It will also include an introduction to radio telemetry and the use of GIS and GPS systems. Student projects will be presented at the end of the course. Collectively, these experiences will expose students to important research techniques in biology and prepare them for opportunities to conduct research with researchers in the fields of ecology, evolution, and conservation biology.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0180 or 0191 or 0716) or (BIOL 0102 or 0120) (MIN GRADE 'C')

BIOSC 1400 - DISEASE ECOLOGY

Minimum Credits: 3
Maximum Credits: 3
This field course will take an ecological approach to the study of infectious diseases. We will explore relationships between parasites (pathogens), their hosts and the environment in which they interact, with the objective of developing an understanding of how parasites (pathogens) spread through, persist in, and impact host populations. The course will include lectures, student-led discussions, field work, and lab-based activities.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0370 or 0371 or BIOL 1430 or 1515; Min Grade 'C'

BIOSC 1420 - WILDLIFE MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
This field course will address the principles that guide natural resource professionals in management of wildlife, including those used in management of game animals for harvest, in maintenance and restoration of viable populations, and in ecosystem management. The application of principles to actual problems in management and conservation of wildlife populations is emphasized including the techniques used to reduce, maintain, and increase population densities.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0180 or 0191 or 0716) or (BIOL 0102 or 0120) (MIN GRADE 'C')

BIOSC 1430 - ECOPHYSIOLOGY

Minimum Credits: 3
Maximum Credits: 3
The adaptations of animals to deal with specialized environmental situations are studied across a spectrum of biological levels from biochemical to organismal. Topics such as thermal relations, water balance, and bioenergetics are considered. Biosc 1430 and 1435 are considered course repeats with similar material covered as a field course or a lecture course, respectively.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0716 or 0191 or 0180) or (BIOL 0102 or 0120) and (CHEM 0120 or 0720 or 0770 or 0970 or 0102 or (CHEM 0112 and 0114)); (Min Grade 'C')

BIOSC 1440 - ANIMAL BEHAVIOR

Minimum Credits: 3
Maximum Credits: 3
This course examines the diversity of animal behavior from evolutionary and ecological points of view. We will examine how animals decide what to eat, where to live, how to compete with each other, and how to avoid predators. We also will investigate how animals choose who to mate with, when they should offer parental care, the conditions that favor social living, and how to best communicate. The lecture and recitation material is appropriate for more advanced students that have been trained in introductory biology and ecology.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120; CREQ: BIOSC 0370 or 0371 or BIOL 1430 or 1515 (ALL MIN GRADE 'C')

BIOSC 1445 - ANIMAL COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
This course addresses the extraordinary variety of ways that animals communicate with each other. We explore how animals produce and receive signals using sound, light, chemicals, mechanical pressure, and electricity. We then approach how such signals evolve by considering questions of optimality, decision making, information theory, and economics. We discuss the contexts in which signals are used, including aggression and dominance, mate attraction and courtship, cooperation and social signaling, and foraging. We conclude by extending to humans, plants, and microbes.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0370 or 0371 or BIOL 1430 or 1515; (MIN GRADE 'C')

BIOSC 1450 - HISTOLOGY

Minimum Credits: 4
Maximum Credits: 4
Course is intended to show how embryonic rudiments build or gans and how tissues and cell types interact to produce the functional systems in the adult. The course covers descriptive, comparative, and experimental histology, but emphasizes the diversity of tissues in organs, and the differentiation of cell types.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
BIOSC 1455 - HUMAN ENDOCRINOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course will focus on the physiology and anatomy of the human endocrine system. The molecular mechanisms of the synthesis, distribution, action, and regulation of hormones will be covered. Endocrine disorders including diabetes, Cushing's disease, Addison's disease, and parathyroid and calcium diseases will be studied to provide context. Additionally, we will cover the endocrine milieu of the developing embryo to adulthood and developmental disturbances during reproduction.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: (BIOSC 1250 or 1070 or 1080) or (NROSCI 1070 or 1250) or CABIO 0206 or CHBIO 0302 or PHARM 5115 (ALL MIN GRADE 'C')

BIOSC 1470 - BIOPHYSICAL CHEMISTRY

Minimum Credits: 3  
Maximum Credits: 3  
This course will deal with fundamental physical chemical principles especially applicable in the study of molecular biology. Topics will include (1) thermodynamics and chemical equilibrium; (2) kinetic theory and transport; and (3) chemical and enzyme kinetics. These subjects will be richly highlighted with numerous examples from biological systems, and techniques for studying these systems will be described. The topics covered will be developed from a physical chemical point of view.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120) and (MATH 0230 or 0231) (MIN GRADE 'C')

BIOSC 1480 - EMBRYOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
The development of some invertebrates' and vertebrates' eggs, embryos, organs and systems is examined in the light of basic concepts and problems of embryology, emphasizing the techniques, critical approaches, and analytic methods of experimental embryology.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120 (MIN GRADE 'C')

BIOSC 1490 - EMBRYOLOGY LABORATORY

Minimum Credits: 2  
Maximum Credits: 2  
The embryological development of the frog, chick and pig are intensively studied in microscopic preparations emphasizing the integration of temporal and spatial events with attention to homology and adaptation.

Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

BIOSC 1500 - CELL BIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course will be devoted to a discussion of the current state of our understanding of cell structure and function. Eukaryotic cells will be emphasized with particular attention to animal cells. However, prokaryotic cells will be discussed for comparative purposes. Course material will
emphasize the experimental basis for our understanding of cell biology and the relationship between structure and function. Most of the techniques to be considered will involve biochemical and molecular biological approaches used in the study of cell function. Thus the course will assume a familiarity with the principles of biochemistry covered in the prerequisites and will not repeat this material. Topics will include membranes, the nucleus, mitochondria and chloroplasts, the cytoskeleton, cell motility, growth and division, endocytosis and exocytosis, and selected topics on the cellular biological aspects of cancer and the immune system.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: BIOSC 1000 or 1810 (MIN GRADE 'C')

**BIOSC 1510 - CELL BIOLOGY LABORATORY**

Minimum Credits: 1  
Maximum Credits: 1  
This experimental methods course is designed to give upper division majors and opportunity to learn modern techniques used in cell biology research. Students will master the fundamentals of light microscopy (bright field, phase contrast, and dark field) and explore more advanced techniques such as fluorescence, confocal, video, and differential interference contrast microscopy. Students will isolate plasma membranes, mitochondria, nuclei, brush borders, and flagella and characterize these organelles by microscopy, enzyme assays and antibody labeling.  
**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (BIOSC 0060 or 0067 or 0068 or 0191 or 0080) or (BIOL 0102 or 0121); CREQ: BIOSC 1500 (MIN GRADE 'C')

**BIOSC 1511 - CELL BIOLOGY LABORATORY WRITING PRACTICUM**

Minimum Credits: 1  
Maximum Credits: 1  
This course is the writing practicum for cell biology laboratory, BIOSC 1510. Students will prepare laboratory reports based on exercises and assignments for the companion course, BIOSC 1510.  
**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or ENGR 0012 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102); CREQ: BIOSC 1510 (MIN GRADE 'C'); PLAN: Molecular Biology (BS)

**BIOSC 1520 - DEVELOPMENTAL BIOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
The mechanisms of animal development will be analyzed. The first half of the course will emphasize classic embryological investigations focusing on how the embryonic body plan becomes organized, while the second half will deal primarily with the genetic and molecular regulation of development. The experimental analysis of such processes as fertilization, morphogenetic movements, tissue interactions, pattern formation, and gene expression will be discussed using examples from a variety of animal embryos, and by discussion of the current research literature.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: BIOSC 0350 or 0355 or BIOL 0350 or 0203 (MIN GRADE 'C')

**BIOSC 1530 - DEVELOPMENTAL BIOLOGY LABORATORY**

Minimum Credits: 1  
Maximum Credits: 1  
This laboratory course is designed to provide students with practical experience in the scientific method of experimental research with regard to animal development. Initial labs will stress observational skills, but the goal of each will be to understand the careful and deliberate process of
experimental design, execution, and the interpretation of results. The importance of establishing and interpreting controls in experimental procedure will also be emphasized.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0060 or 0067 or 0068 or 0191 or 0080 or BIOL 0102 or 0121; CREQ: BIOSC 1520 (ALL MIN GRADE ‘C’)

**BIOSC 1531 - DEVELOPMENTAL BIOLOGY LABORATORY WRITING PRACTICUM**

Minimum Credits: 1  
Maximum Credits: 1  
Course is a writing practicum for developmental biology laboratory, BIOSC 1530. Students will prepare laboratory reports and write essays based on exercises and assignments for the companion course, BIOSC 1530.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or ENGR 0012 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102); CREQ: BIOSC 1530 (MIN GRADE ‘C’); PLAN: Molecular Biology (BS)

**BIOSC 1540 - COMPUTATIONAL BIOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
This upper-level course is designed to give student's abroad understanding of how computational approaches can be used to solve problems in biology. Current computational techniques will be covered in depth, including sequence analysis and alignment, the construction of phylogenies, and comparison based prediction of function and structure. Course will also provide survey-level coverage of new and specialized techniques, in the form of brief introductions and case studies. Both the biological and computational under pinning's of the methods will be addresses.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0180 or 0191 or 0716) or (BIOL 0102 or 0120) (MIN GRADE ‘C’)

**BIOSC 1545 - THE MATHEMATICS OF BIOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
This course uses specific examples from biology to illustrate how mathematics has been used to increase our understanding of biological systems. Some of the topics that we will cover come from neurobiology, cell biology, and human physiology. For each topic, we will present key mathematical concepts that will give students a new perspective on biology. Standard computer packages will be used to solve the mathematical models, giving the students hands on computer experience. In the final weeks, students will pick a topic of interest and construct their own model by using many of the techniques learned earlier in the course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 1000 or 1080 or 1250 or 1500 or 1540 or 1810 (MIN GRADE ‘C’) or MATH 0280

**BIOSC 1550 - ECOLOGY AND EVOLUTION SEMINAR**

Minimum Credits: 1  
Maximum Credits: 1  
In this seminar course, a single topic is developed by student presentations of research articles from the original scientific literature as chosen by the instructor. Topics might include, for example, "cladistics controversies", "molecular phylogeny", or "wetlands conservation".

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

Course Requirements: PREQ: (BIOSC 0350 or 0355 or BIOL 0350 or 0203) and (BIOSC 0370 or 0371 or BIOL 1430 or 1515) and BIOSC 1130; (ALL MIN GRADE 'C') PLAN: Ecology and Evolution (BS)

**BIOSC 1551 - ECOLOGY AND EVOLUTION SEMINAR WRITING PRACTICUM**

Minimum Credits: 1
Maximum Credits: 1
This course is a writing practicum for the ecology and evolution seminar. Students will write one paper, with several revisions, based on the topic of their oral presentation in the co-requisite course BIOSC 1550. Topics will be chosen by the instructor for BIOSC 1550.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or ENGR 0012 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102); CREQ: BIOSC 1550 (MIN GRADE 'C'); PLAN: Ecology and Evolution (BS)

**BIOSC 1560 - CELL AND DEVELOPMENTAL BIOLOGY SEMINAR**

Minimum Credits: 1
Maximum Credits: 1
In this seminar course, a single topic each term is developed by student presentations of research articles from the original scientific literature, as chosen by the instructor. Possible topics might include genes encoding major developmental switch proteins, the cytoskeletal basis of morphological movements in development, or establishing and subdividing body axes in development.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 1500 (MIN GRADE 'C'); CREQ: BIOSC 1520 (MIN GRADE 'C'); PLAN: Molecular Biology (BS)

**BIOSC 1561 - CELL DEVELOPMENTAL BIOLOGY SEMINAR WRITING PRACTICUM**

Minimum Credits: 1
Maximum Credits: 1
This course is a writing practicum for the cell and developmental biology seminar. Topics will be chosen by the instructor for BIOSC 1560.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or ENGR 0012 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102); CREQ: BIOSC 1560 (MIN GRADE 'C'); PLAN: Molecular Biology (BS)

**BIOSC 1570 - MICROBIOLOGY SEMINAR**

Minimum Credits: 1
Maximum Credits: 1
In this seminar course, a single topic each term will be chosen in which the instructor is experienced and knowledgeable, and in which a suitable collection of primary research articles is available for student presentation. The papers to be discussed will be drawn primarily from the recent literature, and will reflect current concepts in microbiology.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 1865 (MIN GRADE 'C'); PLAN: Microbiology (BS)

**BIOSC 1571 - MICROBIOLOGY SEMINAR WRITING PRACTICUM**
Minimum Credits: 1
Maximum Credits: 1
This course is a writing practicum for the microbiology seminar. Topics will be chosen by the instructor for BIOSC 1570.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or ENGR 0012 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102); CREQ: BIOSC 1570 (MIN GRADE 'C'); PLAN: Microbiology (BS)

BIOSC 1580 - BIOCHEMISTRY SEMINAR

Minimum Credits: 1
Maximum Credits: 1
In this seminar course, a single topic each term is developed by student presentations of research articles from the original scientific literature, as chosen by the instructor. Recent topics have included biosynthesis of peptide hormones, recombinant DNA technology, processing of mRNA precursors, protein folding with emphasis on the molecular biology and biochemistry of chaperonins, and protein translocation within cells.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 1820 (MIN GRADE 'C'); PLAN: Molecular Biology (BS)

BIOSC 1581 - BIOCHEMISTRY SEMINAR WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
This course is a writing practicum for the biochemistry seminar. Topics will be chosen by the instructor for BIOSC 1580.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or ENGR 0012 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102); CREQ: BIOSC 1580 (MIN GRADE 'C'); PLAN: Molecular Biology (BS)

BIOSC 1590 - SPECIAL TOPICS IN BIOLOGICAL SCIENCE

Minimum Credits: 1
Maximum Credits: 3
A single major topic in biology will be developed and explored by students in the form of student presentations of current and/or historical literature.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0350 or 0355 or BIOL 0203 or 0350 (MIN GRADE 'C')

BIOSC 1610 - CONSERVATION BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This field course will focus primarily on the applied aspects of conservation biology by examining the degradation and loss of species populations and ecosystems due to human activities and by considering alternatives for avoiding and/or mitigating these impacts. The perspectives of science, management, and policy will be elucidated in the context of historical, current, and future strategies designed to conserve the diversity of life.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0180 or 0191 or 0716) or (BIOL 0102 or 0120) (MIN GRADE 'C')
BIOSC 1640 - BIOINFORMATICS SOFTWARE DESIGN

Minimum Credits: 3
Maximum Credits: 3
This course will develop software for bioinformatics applications.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: BIOSC 1540 or CS 1501 (MIN GRADE 'C'); PLAN: Bioinformatics

BIOSC 1690 - EXPERIENCE IN UNDERGRADUATE TEACHING

Minimum Credits: 0
Maximum Credits: 6
A program to allow qualified juniors and seniors to assist in the teaching of one of the biological sciences lecture or laboratory courses. Details of the student's responsibility must be worked out with the biological sciences faculty member in whose course the student will be assisting.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

BIOSC 1730 - VIROLOGY

Minimum Credits: 3
Maximum Credits: 3
This course presents the concepts and methods of modern molecular virology. Principles of bacteriophage and animal virus replication are covered. Particular emphasis is placed on the use of viruses as model systems to approach basic problems in molecular biology. Applications of virological knowledge to medicine and biotechnology will be discussed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0350 or 0355 OR BIOL 0203) and (BIOSC 1000 and 1850) (MIN GRADE 'C')

BIOSC 1740 - VIROLOGY LABORATORY

Minimum Credits: 1
Maximum Credits: 1
THIS COURSE IS DESIGNED TO GIVE EACH STUDENT PRACTICAL EXPERIENCE WITH THE METHODS AND TECHNIQUES USED IN THE STUDY OF VIRUSES WHILE CONDUCTING ORIGINAL RESEARCH USING BACTERIOPHAGES.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 1855 or 1860) and (BIOSC 0350 or 0355 or BIOL 0203 or 0350); MIN GRADE 'C' for all courses

BIOSC 1741 - VIROLOGY LABORATORY WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Course is a writing practicum for virology laboratory, BIOSC 1740. Students will prepare laboratory reports and write essays based on exercises and assignments for the companion course, BIOSC 1740.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or ENGR 0012 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102); CREQ: BIOSC 1740(MIN GRADE 'C')
BIOSC 1760 - IMMUNOLOGY

Minimum Credits: 3
Maximum Credits: 3
Course will describe the role of the immune system invertebrates. The molecular and cellular basis of immunity will be emphasized. The roles of antigens, antibodies and immunocompetent cells in pathogenesis and immunity will be covered. The applications of immunology in the design of vaccines, immunotherapeutic, immunodiagnostics, organ transplantation, cancer therapy, and immune system diseases will be discussed, as will the use of immunology in biological research.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 0350 or 0355 or BIOL 0350 or 0203 (MIN GRADE 'C')

BIOSC 1810 - MACROMOLECULAR STRUCTURE AND FUNCTION

Minimum Credits: 3
Maximum Credits: 3
This course is concerned primarily with the structure and functions of proteins and nucleic acids. These are large polymers where structure and function are determined by the sequence of monomeric units. Topics will include the physical and chemical properties of the monomer units (amino acids/nucleotides); the determination of the linear sequence of these units; analyses of the three-dimensional structures of the macromolecules; kinetics and mechanisms of enzyme catalyzed reactions, including RNA enzymes; regulation of enzyme activity; molecular recognition; and fidelity of protein synthesis. Emphasis throughout will be on experimental methods, molecular mechanisms and problem solving.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0716 or 0191 or 0180 or BIOENG 1071 or BIOENG 1072 or BIOL 0102 or 0120 ) (MIN GRADE 'C') and (CHEM 0320 or 0350 or 0740 or 0208 or 0232)

BIOSC 1820 - METABOLIC PATHWAYS AND REGULATION

Minimum Credits: 3
Maximum Credits: 3
The primary focus of this course will be on the pathways of intermediary metabolism by which all cells and organisms synthesize and degrade carbohydrates, lipids (fats), nitrogenous compounds, and nucleotides. Specifically, we will examine the chemistry of the reactions that constitute these pathways, and discuss how energy is derived from the breakdown of nutrients. A strong emphasis will be placed on how the pathways are regulated by specific molecules and hormones in living systems. Finally, we will consider how several human diseases arise from defects in metabolic pathways, and will review papers in the current scientific literature on new techniques by which the components of metabolic pathways are characterized in the laboratory.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: BIOSC 1810 (MIN GRADE 'C')

BIOSC 1830 - BIOCHEMISTRY LABORATORY

Minimum Credits: 2
Maximum Credits: 2
Course introduces several basic experimental techniques of biochemistry including spectrophotometry, ion-exchange and gel-permeation chromatography, radio-chemical methods, gel electrophoresis, enzyme isolation, and nucleic acid purification. Lecture will concern the techniques under study.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
**Course Requirements:** PREQ: (BIOSC 0060 or 0067 or 0068 or 0191 or 0080 or BIOL 0102 or 0121) and BIOSC 1810 (MIN GRADE 'C'); CREQ: BIOSC 1820 (MIN GRADE 'C')

**BIOSC 1831 - BIOCHEMISTRY LABORATORY WRITING PRACTICUM**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
Course is a writing practicum for biochemistry laboratory, BIOSC 1830. Students will prepare laboratory reports and write essays based on exercises and assignments for the companion course, BIOSC 1830.  
**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102 or ENGR 0012); CREQ: BIOSC 1830 (MIN GRADE 'C'); PLAN; Molecular Biology (BS)

**BIOSC 1850 - MICROBIOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will introduce students to the basic biology, diversity in types, and survival strategies of microorganisms. We will study basic topics, including microbial growth, metabolism, nutrition and genetics, as well as the relevance of microorganisms to human disease, biotechnology and environmental science.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (BIOSC 0160 or 0716 or 0191 or 0180 or BIOENG 1071 or 1072 or BIOL 0102 or 0120) and [CHEM 0120 or 0720 or 0770 or 0970 or 0102 or (0112 and 0114)] (MIN GRADE 'C')

**BIOSC 1855 - INTRODUCTION TO MICROBIOLOGY LABORATORY**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
Students in this course will culture microorganisms from natural samples such as soil, vegetables, and their own skin, and learn various methods in the process of studying the organisms they have cultured. The topics for the course include (a) survey types of microorganisms, including bacteria, fungi, protozoa, algae, and bacterial viruses, (b) types of methods used to culture and study these microorganisms, (c) some practical applications of microbiology such as microbiological analysis of wastewater, and identification of clinical isolates.  
**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: BIOSC 0060 or 0067 or 0068 or 0191 or 0080 or BIOL 0102 or 0121 (MIN GRADE 'C'); CREQ: BIOSC 1850 (MIN GRADE 'C')

**BIOSC 1860 - MICROBIOLOGY LABORATORY**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
This laboratory course introduces basic techniques used for isolation of microorganisms in pure culture, identification of groups of microorganisms, and study of microbial physiology, genetics, and ecology. Some topics in applied microbiology that are covered include food microbiology, water and waste water analysis, and identification and antibiotic sensitivity-testing of pathogenic isolates. Viruses, archaebacterial, bacteria, algae, protozoa, and fungi that students isolate from soil, pond water, human skin, and other sources are used to illustrate these methods.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0060 or 0067 or 0068 or 0191 or 0080 or BIOL 0102 or 0121) (MIN GRADE 'C'); CREQ: BIOSC 1850 (MIN GRADE 'C'); PLAN: Microbiology (BS)

**BIOSC 1861 - MICROBIOLOGY LABORATORY WRITING PRACTICUM**

Minimum Credits: 1  
Maximum Credits: 1  
Course is a writing practicum for microbiology laboratory, BIOSC 1860. Students will prepare laboratory reports and write essays based on exercises and assignments for the companion course, BIOSC 1860.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102 or ENGR 0012); CREQ: BIOSC 1860 (MIN GRADE 'C'); PLAN: Microbiology (BS)

**BIOSC 1865 - MICROBIAL PHYSIOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the diversity of microbial life from a physiological point of view. We will examine the fundamental processes of microbial metabolism in diverse organisms, and develop a framework for understanding how organisms use different approaches to solve specific needs. Lecture material is appropriate for students trained in introductory microbiology and in biochemistry.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: BIOSC 1850 and (BIOSC 1000 or 1810); Minimum Grade 'C'

**BIOSC 1870 - ANIMAL PHYSIOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
Course is a survey of the current state of our knowledge of how animals work. The emphasis will be on physiological mechanisms for survival in natural environments. A comparative approach will stress the diversity of physiological adaptations throughout the animal kingdom. Topics include nutrition, metabolism, muscle, respiration, circulation, osmoregulation, sensory and neural physiology, and hormones. The material will stress multicellular systems of organization at the levels of tissues, organs, and whole animals.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120 (MIN GRADE 'C')

**BIOSC 1901 - INDEPENDENT STUDY**

Minimum Credits: 0  
Maximum Credits: 6  
A program of independent reading with individual tutorials on a topic chosen in consultation with the BIOSC faculty member who will supervise the program.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit  
Course Requirements: PREQ: BIOSC 0160 or 0716 or 0191 or 0180 or BIOL 0102 or 0120

**BIOSC 1903 - UNDERGRADUATE RESEARCH**

1372
Minimum Credits: 0.5
Maximum Credits: 6
A program of independent laboratory research, with supporting library work, on a topic chosen in consultation with the BIOSC faculty member who will supervise the work.
**Academic Career:** Undergraduate
**Course Component:** Independent Study
**Grade Component:** Satisfactory/No Credit

**BIOSC 1904 - UNDERGRADUATE HONORS RESEARCH**

Minimum Credits: 0.5
Maximum Credits: 6
A program of independent laboratory and library research on topic chosen in consultation with the BIOSC faculty member who will supervise the work.
**Academic Career:** Undergraduate
**Course Component:** Independent Study
**Grade Component:** Satisfactory/No Credit
**Course Requirements:** PREQ: [(BIOSC 0060 or 0067 or 0068 or 0080 or BIOL 0121) and (BIOSC 0160 or 0716 or 0180 or BIOL 0120)] or BIOSC 0191 or BIOL 0102 (MIN GRADE 'C')

**BIOSC 1905 - HONORS RESEARCH WRITING PRACTICUM**

Minimum Credits: 1
Maximum Credits: 1
**Academic Career:** Undergraduate
**Course Component:** Practicum
**Grade Component:** LG/SNC Elective Basis

**BIOSC 1906 - RESEARCH COMMUNICATION: COMMUNICATION IN LIFE SCIENCES RESEARCH**

Minimum Credits: 1
Maximum Credits: 1
This course introduces students to a variety of topics associated with the written, oral, and pictorial communication of scientific hypotheses, data, and results, using personal research experiences of students in the course. Students will read scientific literature, discuss how to present data and models, and complete diverse assignments. Techniques to model presentations for different audiences will be emphasized. It is recommended that students work in a research lab while taking the course. The course is for students enrolled in the research certificate in biological and biomedical sciences.
**Academic Career:** Undergraduate
**Course Component:** Seminar
**Grade Component:** Letter Grade

**BIOSC 1907 - RESEARCH DECONSTRUCTION: UNDER THE HOOD OF LIFE SCIENCES RESEARCH**

Minimum Credits: 1
Maximum Credits: 1
This course takes an in depth look into how scientific research is done by studying where research is done, who does it, how questions are developed, how approaches and techniques are chosen, and how data is analyzed and presented. Students listen to a research seminar aimed at an expert audience, and then dissect the work throughout the semester. At the end of term, pieces from studying the research project are reassembled, a video of the seminar critiqued, and the course concludes with a Q&A session with the seminar speaker. The course is for students enrolled in the research certificate in biological and biomedical sciences.
**Academic Career:** Undergraduate
**Course Component:** Seminar
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: BIOSC 0160 or 0180 or 0191 or 0716 or BIOL 0102 or 0120 (MIN GRADE 'C'); CREQ: BIOSC 1903 or 1904 or NROSCI 1901 or 1961 (MIN GRADE 'C')
BIOSC 1940 - MOLECULAR BIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
Course will examine the molecular basis of life processes, with a primary emphasis on genes (what they are, what they do, how they determine the properties of an organism). Topics covered will include replication of DNA, transcription of DNA into RNA, and translation of RNA into protein. Much of the course will be concerned with how these processes are regulated in response to changes in the environment, and how this regulation relates to the observed properties and behavior of the organism.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (BIOSC 0350 or 0355 or BIOL 0350 or 0203) and (BIOSC 1000 or 1810) (MIN GRADE 'C')

BIOSC 1950 - MOLECULAR GENETICS LABORATORY

Minimum Credits: 2  
Maximum Credits: 2  
This course will discuss the theories and methodologies that have recently emerged as the central theme of modern molecular genetics. Lectures will emphasize descriptions and applications of techniques such as molecular cloning, restriction site mapping, in vitro mutagenesis, the polymerase chain reaction and DNA sequence analysis that have led to the recent explosion in knowledge about chromosome organization, gene structure, and the regulation of gene expression. Laboratory sessions will emphasize polymerase chain reaction, agarose gel electrophoresis, cloning DNA fragments, bacterial transformation, restriction analysis, and the sanger method of sequencing DNA.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: BIOSC 0060 or 0067 or 0068 or 0191 or 0080 or BIOL 0102 or 0121 (MIN GRADE 'C'); CREQ: BIOSC 1940 (MIN GRADE 'C')

BIOSC 1951 - MOLECULAR GENETICS LABORATORY WRITING PRACTICUM

Minimum Credits: 1  
Maximum Credits: 1  
Course is a writing practicum for molecular genetics laboratory, BIOSC 1950. Students will prepare laboratory reports and write essays based on exercises and assignments for the companion course, BIOSC 1950.

Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102 or ENGR 0012); CREQ: BIOSC 1950 (MIN GRADE 'C'); PLAN: Molecular Biology (BS)

BIOSC 1999 - MEDICAL MICROBIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced level lecture course educating students in the microbial aspects of human infectious diseases. Students will learn about the microbial basis of infection, the host response, and the nature of specific infections within the human body. The course also will present approaches for the diagnosis of infections and strategies for disease control. The topics of medical microbiology will be presented in a system-based rather than an organism-based approach.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: BIOSC 1850 (MIN GRADE 'C')

BIOST 1200 - INTRODUCTION TO BIOSTATISTICAL REASONING
This SIBS Pittsburgh program is an introduction to the most commonly used statistical tools in 2-sample comparative studies in medicine and public health, with an emphasis on applications in epidemiology and human genetics.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Letter Grade

**BIOST 2011 - PRINCIPLES OF STATISTICAL REASONING**

Minimum Credits: 3  
Maximum Credits: 3

Acquaints students with the concepts of statistical reasoning as applied to the study of public health problems. Students learn the general principles of statistical analysis and acquire the ability to utilize a statistical software package (Minitab) as a tool to facilitate the processing, editing, storing, displaying, analysis and interpretation of health research related data.

**Academic Career:** GRAD

**Course Component:** Lecture

**Grade Component:** GradLG/SU3

**Course Requirements:** PROG: Graduate School of Public Health; PLAN: Excluded Plans = Biostatistics(DPH, PHD, MPH, MS, MSH)

**BIOST 2041 - INTRODUCTION TO STATISTICAL METHODS 1**

Minimum Credits: 3  
Maximum Credits: 3

Discusses techniques for the application of statistical theory to actual data. Topics include probability theory, estimation of parameters, and tests of hypothesis for both the discrete and continuous case.

**Academic Career:** GRAD

**Course Component:** Lecture

**Grade Component:** GradLG/SU3
BUS 0005 - ENTREPRENEURSHIP, SMALL BUSINESS, & ECONOMIC DEVELOPMENT: ANALYSIS BETWEEN EUROPE & THE U.S.

Minimum Credits: 3
Maximum Credits: 3
This course analyses the way in which entrepreneurship and small business assist economic development. It focuses on the interrelationships between these two basic constitutive terms of the development process, and how they shape the process when they overlap. A comparative analysis of the main features of the entrepreneurial process and the development of the small business sector in Europe and the U.S. will be the core of the course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUS 0010 - YOUR ACADEMIC AND CAREER SUCCESS

Minimum Credits: 1
Maximum Credits: 1
In this course, you will: learn the technical aspects (academic and experiential attributes) pertaining to the majors and certificates offered in CBA; explore paths of self-awareness and career opportunity utilizing assessment models including StrengthsFinder; Utilize Bloomberg Business Week to develop business literacy; explore global opportunities, such as study abroad, and the international internship program; develop networking skills, and relate those skills to establishing your personal and professional network; create a resume that has been reviewed by a professional development consultant; establish a CBA Connect account on which you will post your resume, schedule appointments with CLDC staff, register for events, view internship/job opportunities, and access secure documents; establish a professional profile on social media; and explore basic competency of Excel.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit
Course Requirements: PROG: College of Business Admin

BUS 0020 - YOUR CAREER SUCCESS

Minimum Credits: 1
Maximum Credits: 1
In this course, you will: learn and practice a variety of tools used in the exploration of career paths (e.g., StrengthsFinder, Skill Clusters, informational interviewing, job shadowing, etc.); Explore your skills, abilities, and preferred roles and environments; develop and implement a personal strategy for career goal setting and planning; learn the internship and job search processes; learn and practice communication tools necessary throughout the job application process (e.g., resume, cover letter, social media, networking, interviewing, and accepting job offers).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit
Course Requirements: PROG: College of Business Admin

BUS 1023 - GLOBAL PERSPECTIVES

Minimum Credits: 1
Maximum Credits: 1
This one-credit, one-week international experience is for students who wish to gain valuable experience and exposure to several business sectors and firms within the visited country. The purpose of experience is to focus on four industry-specific business sectors relevant to the historical, cultural, political, and economic background of the country. The sectors will be chosen from the following: healthcare, tourism/hospitality, arts, sports/athletics, human/social services, education, real estate, and banking. As a result of the experience, students will develop a "tool kit" of concepts and information regarding the cultural and business climate of the country in focus, begin developing of a working knowledge of how differences in cultural context affect business activities and develop a basis for critical evaluation of a country-specific, cross-sector business analysis.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
BUS 1025 - DOING BUSINESS IN EUROPE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUS 1027 - DOING BUSINESS IN ASIA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUS 1028 - DOING BUSINESS IN JAPAN

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to provide a broad introduction to business in Japan. Topics covered include: the Japanese economy, from post-war growth, through the 'bubble' and post-'bubble' years, to today; ongoing demographic, social/cultural, and structural change; human resource and production management; women in the workforce; and working with Japanese in a business setting. By the end of the course, students will be more knowledgeable about Japan and Japanese business, and about the opportunities and challenges facing Japanese firms and individuals working in or with Japanese firms.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUS 1030 - DOING BUSINESS IN LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUS 1036 - DOING BUSINESS: GERMANY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUS 1038 - DOING BUSINESS IN THE PEOPLE'S REPUBLIC OF CHINA

Minimum Credits: 3
Maximum Credits: 3
This course is for students who wish to gain valuable work experience, develop professional skills, and earn academic credit while in a foreign setting. The first two weeks will be spent on Pitt's campus, providing students with an opportunity to develop cultural knowledge and language skills. Faculty will then accompany students abroad and hold courses for an additional two weeks; students then begin their business internship. Final student presentations will take place in September. No prior language knowledge is required.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**BUS 1039 - DOING BUSINESS: FRANCE**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**BUS 1040 - DOING BUSINESS IN BRAZIL**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

This course is for students who wish to gain valuable work experience, develop professional skills, and earn academic credit while in a foreign setting. The first two weeks will be spent on Pitt's campus, providing students with an opportunity to develop cultural knowledge and language skills. Faculty will then accompany students abroad and hold courses for an additional two weeks; students then begin their business internship. Final student presentations will take place in September. No prior language knowledge is required.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**BUS 1045 - DOING BUSINESS IN SPAIN**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**BUS 1175 - INTRODUCTION TO INTERNATIONAL BUSINESS**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

Examines why firms engage in international activities foreign trade, operating abroad, technology transfer, and various ways business can be conducted internationally. Critical economic, legal, political, social and cultural factors affecting international business will be reviewed as they influence corporate objectives and actions.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**BUS 1392 - PERSONAL FINANCIAL PLANNING**

Minimum Credits: 1  
Maximum Credits: 1  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Satisfactory/No Credit

This course deals with the basics of personal financial planning. Students will create personal financial plans based on projected horizons of 1, 3, and 5 years. The primary focus is on near term planning with emphasis on: initial savings, paying off student debt, judicious use of credit, and investing for short and long term goals. Students will prioritize and codify their plans based on personal, professional, and lifestyle objectives projected over the plans stated horizons.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Satisfactory/No Credit
BUS 1447 - TOPICS IN INTERNATIONAL HUMAN RESOURCE MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
This course explores topics of current interest in international human resources management. Topics covered will vary by instructor in areas such as HRM planning, selection, recruitment, appraisal, compensation and benefits, training and development, labor relations, and organizational culture and structure.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

BUS 1448 - TOPICS IN INTERNATIONAL ORGANIZATIONAL BEHAVIOR

Minimum Credits: 3
Maximum Credits: 3
This course explores topics in the field of organizational behavior that have significant international dimensions such as leadership, work motivation, organizational culture, communication, and team dynamics. Topics covered will vary by instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

BUS 1449 - TOPICS IN INTERNATIONAL MARKETING

Minimum Credits: 3
Maximum Credits: 3
This course explores topics of current interest in international marketing. Topics covered will vary by instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

BUS 1755 - SERVICE LEARNING IN ORGANIZATIONS

Minimum Credits: 3
Maximum Credits: 3
This course is designed around an experiential learning methodology in an international context that uses an international service project for a community organization to enhance student understanding of a particular content area in leadership and ethics. Students will be challenged to immerse themselves in readings, essays, and discussions in a specific content area that will be operationalized and reviewed throughout the duration of the community service project. Students in this course are required to participate in the international service learning component of the program.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUS 1865 - TOPICS IN ENTREPRENEURSHIP

Minimum Credits: 3
Maximum Credits: 3
This course explores topics in the field of entrepreneurship. The topics covered will vary by instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUS 1900 - BUSINESS INTERNSHIP
Minimum Credits: 1  
Maximum Credits: 3  
The business internship provides an opportunity for students to study in depth a particular area of business management in a work setting. An internship is primarily an academic experience, not a part-time or full-time job, in which students work for a firm or organization under a supervisor and faculty sponsor to achieve specific educational objectives.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: Satisfactory/No Credit  
Course Requirements: Restricted for College of Business Administration  

BUS 1901 - INDEPENDENT STUDY

Minimum Credits: 1  
Maximum Credits: 3  
An independent study course for students desiring to pursue in greater depth a specific set of business problems or functions to which they have been introduced in other business courses. The course involves directed reading and research under guidance of a full-time faculty member.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis  
Course Requirements: Restricted for College of Business Administration  

BUS 1902 - INDEPENDENT STUDY

Minimum Credits: 1  
Maximum Credits: 3  
An independent study course for students desiring to pursue in greater depth a specific set of business problems or functions to which they have been introduced in other business courses. The course involves directed reading and research under guidance of a full-time faculty member.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit  
Course Requirements: Restricted for College of Business Administration  

BUS 1903 - CAREER EXPLORATION INTERNSHIP

Minimum Credits: 3  
Maximum Credits: 3  
CBA students who participate in a full-time, career-developing internship experience as an integral part of their CBA academic program may register for this course. Students must have completed at least 60 credits, be in good academic standing, and plan to return to campus the first spring or fall term immediately following the internship term. Internships for this course are designated by the offering organization as full-time and lasting the duration of the term. Internship agreements specifying the academic work to be completed as part of the internship are required.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: Letter Grade  
Course Requirements: Restricted for College of Business Administration  

BUS 1904 - CBA FULL-TIME CO-OP

Minimum Credits: 1  
Maximum Credits: 1  
CBA students who participate in a full-time career-developing internship experience as an integral part of their CBA academic program may register for this course. Students must have completed at least 60 credits, be in good academic standing, and plan to return to campus the first spring or fall term immediately following the internship term. Internships for this course are designated by the offering organization as full-time and lasting the duration of the term. Internship agreements specifying the academic work to be completed as part of the internship are required.  
Academic Career: Undergraduate  

1380
Course Component: Internship
Grade Component: Satisfactory/No Credit
Course Requirements: Restricted for College of Business Administration

BUS 1905 - MANAGERIAL COMPETENCIES INTRNSHP

Minimum Credits: 3
Maximum Credits: 3
The managerial competencies internship is an opportunity for students to explore a career interest and develop competencies necessary for effective performance as a manager through a formal work experience in a business or non-profit organization. The course focuses on those managerial roles and competencies required for successful performance in the intern's position. Interns learn about the primary roles of their position and develop several key competencies with the company supervisor and instructor as mentors.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

BUS 1906 - CAREER EXPLORATION INTERNSHIP

Minimum Credits: 1
Maximum Credits: 1
This internship course is designed to help students improve self-awareness of personal preferences with respect to career interests in the context of a work experience. Incorporates readings, self-assessment instruments and exercises, job analysis, journal entries and two performance appraisals. May be used for internships, summer jobs, part time jobs and full-time positions that involve work related to a possible career interest. The internship site may be located anywhere in the world.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

BUS 1910 - BUSINESS INTERNATIONAL INTERNSHIP

Minimum Credits: 3
Maximum Credits: 6

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

BUS 1915 - DIRECTED RESEARCH

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

BUS 1920 - BRAZIL TODAY: ETHNICITY, ECONOMY, AND ENVIRONMENT

Minimum Credits: 1
Maximum Credits: 1

After an overview of brazil, this course will provide an introduction to brazil in three dimensions: its diverse groups of people, the growth and development of the Brazilian economy, and the environmental opportunities and challenges in modern Brazil.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
BUS 1925 - CHINA TODAY

Minimum Credits: 1  
Maximum Credits: 1  
The course will explore: who are "the Chinese"? How does China's multi-ethnic composition affect educational opportunity and career advancement? Education in China past and present: how does the history of education in China affect educational opportunity today? What is in store as China moves from technological supplier to technological innovator?  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

BUS 1930 - SOUTH AFRICA TODAY: ECONOMY, TECHNOLOGY AND PEOPLE

Minimum Credits: 1  
Maximum Credits: 1  
South Africa's 2010 entry into BRICS transformed BRICS from a body founded on comparable economic performance, to an increasingly a political club representing the developing world, determined to counterbalance Western influence in major international forums. Entrance into this club is connected to the race for mineral resources needed by emerging nations. South Africa is the fourth largest source of gold and diamonds, and sitting on three-quarters of global Platinum reserves. By 2014, the IMF predicts Brazil, India, China, Russia and South Africa will contribute to 60% of the global growth.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

BUS 1940 - STUDY ABROAD

Minimum Credits: 1  
Maximum Credits: 18  
Study abroad represents credits earned in an approved study abroad program.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

BUS 1941 - STUDY ABROAD: ARGENTINA

Minimum Credits: 1  
Maximum Credits: 18  
Study abroad Argentina represents credits earned in an approved study abroad program in Argentina.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

BUS 1942 - STUDY ABROAD: AUSTRALIA

Minimum Credits: 1  
Maximum Credits: 18  
Study abroad Australia represents credits earned in an approved study abroad program in Australia.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

BUS 1943 - STUDY ABROAD: AUSTRIA
Minimum Credits: 1
Maximum Credits: 18
Study abroad Austria represents credits earned in an approved study abroad program in Austria.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1946 - STUDY ABROAD: BRAZIL

Minimum Credits: 1
Maximum Credits: 18
Study abroad Brazil represents credits earned in an approved study abroad program in Brazil.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1949 - STUDY ABROAD: CANADA

Minimum Credits: 1
Maximum Credits: 18
Study abroad Canada represents credits earned in an approved study abroad program in Canada.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1952 - STUDY ABROAD: CHINA

Minimum Credits: 1
Maximum Credits: 18
Study abroad China represents credits earned in an approved study abroad program in China.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1953 - STUDY ABROAD: COSTA RICA

Minimum Credits: 1
Maximum Credits: 21
Study abroad Costa Rica represents credits earned in an approved study abroad program in Costa Rica.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1955 - STUDY ABROAD: DENMARK

Minimum Credits: 1
Maximum Credits: 18
Study abroad Denmark represents credits earned in an approved study abroad program in Denmark.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1958 - STUDY ABROAD: ENGLAND
Minimum Credits: 1
Maximum Credits: 18
Study abroad England represents credits earned in an approved study abroad program in England.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1961 - STUDY ABROAD: FRANCE

Minimum Credits: 1
Maximum Credits: 18
Study abroad France represents credits earned in an approved study abroad program in France.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1964 - STUDY ABROAD: GERMANY

Minimum Credits: 1
Maximum Credits: 18
Study abroad Germany represents credits earned in an approved study abroad program in Germany.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1965 - STUDY ABROAD: INDIA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1967 - STUDY ABROAD: IRELAND

Minimum Credits: 1
Maximum Credits: 18
Study abroad Ireland represents credits earned in an approved study abroad program in Ireland.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1970 - STUDY ABROAD: ISRAEL

Minimum Credits: 1
Maximum Credits: 18
Study abroad Israel represents credits earned in an approved study abroad program in Israel.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1973 - STUDY ABROAD: ITALY
Minimum Credits: 1
Maximum Credits: 18
Study abroad Italy represents credits earned in an approved study abroad program in Italy.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1976 - STUDY ABROAD: JAPAN

Minimum Credits: 1
Maximum Credits: 18
Study abroad Japan represents credits earned in an approved study abroad program in Japan.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1979 - STUDY ABROAD: MEXICO

Minimum Credits: 1
Maximum Credits: 18
Study abroad Mexico represents credits earned in an approved study abroad program in Mexico.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1982 - STUDY ABROAD: RUSSIA

Minimum Credits: 1
Maximum Credits: 18
Study abroad Russia represents credits earned in an approved study abroad program in Russia.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1985 - STUDY ABROAD: SPAIN

Minimum Credits: 1
Maximum Credits: 18
Study abroad Spain represents credits earned in an approved study abroad program in Spain.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1987 - STUDY ABROAD: URUGUAY

Minimum Credits: 1
Maximum Credits: 18
Study abroad Uruguay represents credits earned in an approved study abroad program in Uruguay.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1990 - STUDY ABROAD: SEMESTER-AT-SEA
Minimum Credits: 1
Maximum Credits: 18
Study Abroad Semester-at-Sea represents credits earned in an approved Semester at Sea Program.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUS 1995 - STUDY ABROAD: INTERNSHIP

Minimum Credits: 1
Maximum Credits: 3
The study abroad internship provides an opportunity for students to study in depth a particular area of business management in a work setting outside of the United States. An internship is primarily an academic experience, not a part-time or full-time job, in which students work for a firm or organization under a supervisor and faculty sponsor to achieve specific educational objectives.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

BUS 1997 - STUDY ABROAD: EXCHANGE PROGRAM

Minimum Credits: 1
Maximum Credits: 18
The study abroad exchange program represents credits earned in an approved exchange agreement between the university of Pittsburgh and another educational institution.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUSACC 0030 - FINANCIAL ACCOUNTING

Minimum Credits: 3
Maximum Credits: 3
Helps students become informed users of firms' external financial accounting reports. The basic structure and contents of such reports and the process by which they are prepared will be studied. Discussion will involve what items are included in financial accounting reports, how such items are measured, and how various economic events affect the reports. An understanding of what can be inferred from the reports about the past performance, present position, and future prospects of the firm will be developed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ECON 0100 or 0102 or 0103 or 0105 or 0110 or 0115 or 0120; PROG: College of Business Administration; LVL: So, Jr, Sr

BUSACC 0040 - MANAGERIAL ACCOUNTING

Minimum Credits: 3
Maximum Credits: 3
Introduces students to the basic terminology and concepts of cost accounting, including product costing, budgetary control, responsibility accounting, and the use of cost information in resource allocation and other managerial decisions. Textbook material and various applications in actual organizations are used to engage students in applying the concepts and methods that have been developed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 0030 or BUSERV 1920 or CDACCT 6030 or MGMT 0022 or BUS 0115 or ACCT 0201; PROG: College of Business Administration
BUSACC 1204 - INTERMEDIATE FINANCIAL REPORTING 1

Minimum Credits: 3
Maximum Credits: 3
Covers the conceptual framework of financial accounting and its influence on Generally Accepted Accounting Principles (GAAP), with special emphasis on the valuation of assets and measurement of income.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (BUSACC0030orBUSERV1920orCDACCT6030orMGMT0022orBUS0115orACCT0201)and(BUSACC0040orBUSERV1925orCDACCT6040orMGMT0023orBUS1110orACCT0202); MINGRADE 'C' For Listed Courses; PLAN: Acct, Fin, Gen Mgmt, Gbl Mgmt, Mrktng, Undcld CBA, BIS, HRM, SCM, Not Cand Pre-MACC

BUSACC 1205 - INTERMEDIATE FINANCIAL REPORTING 2

Minimum Credits: 3
Maximum Credits: 3
Topics covered include valuation of liabilities, owners' equity, cash flow statements, and disclosure outside the primary financial statements. Like intermediate financial reporting 1, this course also engages students as active participants in the learning process. Required for all accounting majors.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 1204; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared, Not Cand for degree-Pre-MACC

BUSACC 1210 - FINANCIAL STATEMENT ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Financial statement analysis focuses on the evaluation of publicly traded company financial statements and related note disclosures as well as the correlation of this historic financial performance to the company's stock prices. This course will assist students' development of a systematic approach to analyzing reported financial data and understanding the underlying risks and possible inconsistencies among comparative companies.

Requirements of the course include interim exams and written and oral presentations of analysis.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSACC 1216 - ADVANCED FINANCIAL ACCOUNTING

Minimum Credits: 3
Maximum Credits: 3
Covers topics that are of particular interest to financial report preparers and auditors. Special emphasis placed on accounting for business combinations and consolidated financial reporting. Other topics include international accounting, accounting for partnerships, and accounting by fiduciaries. Required for all accounting majors pursuing the CPA track.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSACC 1221 - STRATEGIC COST MANAGEMENT
Minimum Credits: 3
Maximum Credits: 3
Topics covered include how product cost measurement affects resource allocation decisions; how to design modern cost systems; the strategic role of cost information and the relationship between process improvement and cost reduction; performance measurement and organizational transformation for value creation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (BUSACC0030 or BUSERV1920 or CDACCT6030 or MGMT0022 or BUS0115 or ACCT0201) and (BUSACC0040 or BUSERV1925 or CDACCT6040 or MGMT0023 or BUS1110 or ACCT0202); MINGRADE 'C' For Listed Courses; PLAN: Acct, Fin, Gen Mgmt, Glbl Mgmt, Mrktng, Undclrd CBA, BIS, HRM, SCM

BUSACC 1236 - ACCOUNTING INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Focuses on the design and implementation of accounting information systems and their ability to: collect data on the activities of an organization, accumulate and summarize the data, and make the information available to managers for analysis, decision-making and control.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (BUSACC0030 or BUSERV1920 or CDACCT6030 or MGMT0022 or BUS0115 or ACCT0201) and (BUSACC0040 or BUSERV1925 or CDACCT6040 or MGMT0023 or BUS1110 or ACCT0202); MINGRADE 'C' For Listed Courses; PLAN: Acct, Fin, Gen Mgmt, Glbl Mgmt, Mrktng, Undclrd CBA, BIS, HRM, SCM, Not Cand for Degree-Pre-MACC

BUSACC 1238 - AUDITING

Minimum Credits: 3
Maximum Credits: 3
Introduces auditing process and profession. Main topics include nature and purpose of auditing, auditing standards, professional conduct, auditor legal liability and approaches in auditing financial statements. Emphasizes a risk-based approach to selecting appropriate auditing techniques. Examines auditor's decision process relating to internal control assessment, audit decision process relating to internal control assessment, audit sampling and obtaining audit evidence about financial accounts. Examines extent of auditor's responsibility to uncover fraud.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 1205; CREQ: BUSACC 1236; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared, Not Cand for Degree-Pre-MACC

BUSACC 1242 - INDIVIDUAL TAX ACCOUNTING AND PLANNING

Minimum Credits: 3
Maximum Credits: 3
This course focuses on individual tax return preparation and planning. Students will learn how to calculate the taxes associated with a variety of personal, investment, property, and sole-proprietorship transactions. Concepts will be reinforced through the preparation of actual tax returns that reflect different combinations of such transactions. Students will develop tax planning skills by considering how various transactions can be restructured to minimize the current or future tax liability.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 1205 or CDACCT 6205; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared
BUSACC 1250 - SURVEY OF INTERNATIONAL ACCOUNTING ISSUES AND THE IASB

Minimum Credits: 3  
Maximum Credits: 3  
This financial accounting elective focuses on exposing students to the international accounting standards setting process and the study of the application of international accounting issues in business. Learning will take place through a mix of classroom time as well as experienced based learning opportunities, with each weekly class focused on an accounting issue and a related site visit experience with a company working on the accounting issue. Participation requires a good understanding of the accounting process and an interest in the global business environment.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

BUSACC 1296 - ACCOUNTING INTERNSHIP

Minimum Credits: 3  
Maximum Credits: 3  
The accounting internship provides business credits for project assignments that augment a professional accounting work experience.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: Satisfactory/No Credit  

BUSACC 1298 - ACCOUNTING INDEPENDENT STUDY

Minimum Credits: 1  
Maximum Credits: 3  
An independent study course for students desiring to pursue in greater depth a specific set of accounting issues or problems to which they have been introduced in other accounting courses. The course involves directed reading and research under the guidance of a full-time faculty member.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Letter Grade  

BUSECN 1010 - MANAGERIAL ECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
Primarily an applied microeconomics analysis although some applied macroeconomic analysis of relevance to the business firm may also be treated. Emphasizes the development of economic tools and concepts which can be used in the firm's management decision-making process. Builds upon the standard economic analysis of the firm which integrates a company's revenue, cost, output and pricing decisions. Marginal and incremental reasoning is stressed as an important decision making principle.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (MATH 0120 or 0126 or 0136 or 0140 or 0220 or 0235) and (ECON 0100 or 0102 or 0105 or 0120) and (ECON 0103 or 0110 or 0115 or 0120); PROG: College of Business Administration

BUSECN 1505 - INDIA TODAY: INNOVATION, INDUSTRY, AND EDUCATION

Minimum Credits: 1  
Maximum Credits: 1  
This short course will explore how innovation, industry and education interact in India and play a role in the perceived position of India as a world.
BUSECN 1508 - INTERNATIONAL ECONOMICS FOR MANAGERS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: International Business (CPIB-CR1) or Global Management (GLMGT-BSBA)

This course introduces the broad field of int'l econ, with emphasis on developing framework for effective management in today's global economy. Key issues and problems are explored in areas of int'l trade, int'l investment & int'l payments, from perspective of manager of enterprises in operating in a cross-border, int'l environment. The approach will be verbal, graphical and non-technical and will draw from actual data sets and late-breaking news items from such business-oriented publications as Financial Times Economist, Wall Street Journal and New York Times.

BUSECN 1509 - INTERNATIONAL BUSINESS AND TRADE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSECN 1510 - RUSSIA TODAY: ENERGY, ECONOMICS AND PUBLIC POLICY IN TRANSITION

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

This course will introduce students to Russia's political, economic, and institutional transformation as a result of the collapse of communism. It will focus on the transition from communism and state-planned economy to democracy and market economy. The course will discuss political and economic transformations, as well as changes in public policy, including health, education and the arts. The course will also focus on pressing contemporary issues of global importance such as energy policy, international trade, and Russia's position on the war of terror.

BUSENV 0060 - MANAGERIAL ETHICS AND STAKEHOLDER MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: College of Business Administration; LVL: So, Jr, Sr

Examines the social, political and legal interfaces between the business institution (especially the corporation) and the environment. Topics typically considered include ethical and value issues in business, the social responsibilities of business, business-government relations, and the management of stakeholder relationships and corporate social policy.

BUSENV 0061 - CERTIFICATE PROGRAM IN LEADERSHIP AND ETHICS: MANAGERIAL ETHICS AND STAKEHOLDER MANAGEMENT
Minimum Credits: 3
Maximum Credits: 3
Course examines the social, political and legal interfaces between the business institution (especially the corporation) and the environment. Topics typically considered include ethical and value issues in business, the social responsibilities of business, business-government relations, and the management of stakeholder relationships and corporate social policy. This section is reserved for students pursuing the Certificate Program in Leadership and Ethics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Leadership and Ethics (CERT)

BUSENV 1701 - ETHICAL LEADERSHIP FUNDAMENTALS

Minimum Credits: 1
Maximum Credits: 1
In this first integrated seminar of the CPLE sequence, students are introduced to ethics concepts and leadership skills - with a particular emphasis on demonstrating how ethics and leadership are complementary areas of emphasis for an effective leader. Ethics and leadership must be considered together in order to produce leaders who have the foresight to consider issues of responsibility, account ability and the full impact of their actions as well as a skill set that will empower them to implement their vision.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Leadership and Ethics (CERT)

BUSENV 1704 - SOCIAL IMPACT OF ORGANIZATIONS

Minimum Credits: 1
Maximum Credits: 1
In this fourth and final integrated seminar of the CPLE sequence, students will learn to consider the broader implications of their organizations involvement in social issues and concerns. Students will be encouraged to develop their negotiation and delegation skills as a means of empowering them to act when their organization in the midst of a difficult social context. In particular, there will be an examination of the in-depth organization involvement in the holocaust.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSENV 1706 - MARKET MANIPULATIONS: CRISES, BUBBLES, ROBBER BARONS AND CORPORATE SAINTS

Minimum Credits: 3
Maximum Credits: 3
Taking a historical perspective, the course focuses on the major kinds of market manipulations, as well as their impacts. Major topic areas include: the nature of a market and its 'failures,' and how firms as well as governments evolved to compensate for those failures; types of major market calamities, with historical comparisons, examining how they might have been successfully managed; the market manipulators, focusing on the 'robber barons' of the 'gilded age;' and the contexts and consequences of market manipulation, including an overview of factory towns and of worker impacts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSENV 1750 - LEADERSHIP AND ETHICS INTERNSHIP

Minimum Credits: 3
Maximum Credits: 3
Students will complete both social and ethics audits of the organization for which they are working an internship assignment. These exercises are designed to lead students to examine and critique their organization's commitment to ethics and leadership in a critical, yet balanced, manner. The content of the internship course centers around students independently recognizing & identifying how issues related to ethics & leadership are & are not addressed in the organizations that they serve. Students permitted to take any internship approved by CBA's Berg Center for Leadership and Ethics.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit  
**Course Requirements:** PLAN: Leadership and Ethics(CERT)

**BUSENV 1755 - SERVICE LEARNING IN ORGANIZATIONS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is designed around an experiential learning methodology that uses a service project for a community organization to enhance student understanding of a particular content area in leadership and ethics. Students will be challenged to immerse themselves in readings, essays and discussions in a specific content area that will be operationalized and reviewed throughout the duration of the community service project.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Leadership and Ethics (CERT)

**BUSENV 1760 - BUSINESS LAW**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Provides students with an exposure to the extensive laws and regulations that affect almost all major aspects of business operations. Topics covered are chosen on the basis of their importance to contemporary business.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSENV 1761 - SPECIAL TOPICS IN BUSINESS LAW**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Focuses on a variety of business law issues. Issues addressed will vary by instructor.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**BUSENV 1765 - LEADERSHIP IN THE SOCIAL ENVIRONMENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will give CPLE students exposure to in-depth analysis of leadership concepts and techniques in personal, interpersonal, and group skill areas. Students will complete a number of assessment and skill development exercises in topics such as teamwork, motivation, agenda building, power and influence tactics, problem solving and decision-making. The exercises will be grounded in students' real world experiences in internships, leadership roles and campus and community organizations.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture
Grade Component: Letter Grade  
Course Requirements: PLAN: Leadership and Ethics (CERT)

**BUSENV 1770 - BUSINESS ENVIRONMENT INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
An independent study course for students desiring to pursue in greater depth a specific set of business environment issues or problems to which they have been introduced in other business environment courses. The course involves directed reading and research under the guidance of a full-time faculty member.  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade

**BUSENV 1775 - CPLE CAPSTONE SEMINAR**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
In this final course of the CPLE sequence, student will take a capstone seminar that is essentially a graduate-level research seminar on specific content areas in ethics and leadership. Based on previous exposure to the research process in the integrated seminars, students in the capstone seminar will be challenged to develop a substantial research project on their primary area of interest and expertise.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Leadership and Ethics (CERT)

**BUSENV 1780 - CORPORATE GOVERNANCE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Corporate governance, the set of policies, process and customs by which an institution is directed, is a topic of increasing importance. How a company is governed influences corporate performance, rights and relationships with its stakeholders. This course aims to provide a deep understanding of the fundamentals of corporate governance from a variety of angles ‘the board of directors, senior management, investors, media, regulators and society ‘ and from an international perspective. After a highlight on the main issues of corporate governance (e.g. the relationships between owners, management, board and institutional environment), relevant theories and corporate governance practices will be analyzed. Students will gain skills required for understanding corporate behavior and will be introduced to issues in business and government relations through lectures, discussion and case/policy studies.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**BUSENV 1785 - SOCIAL ENTREPRENEURSHIP**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course covers theory, conceptual frameworks, and tools used to formulate strategies for commercializing new technologies. The analytical frameworks cover elements of commercialization strategy that are equally critical to start-ups and to corporate technology ventures. In addition, we discuss some of the key challenges that differ for start-ups versus established firms. The primary deliverable in the course is a professional quality project which evaluates the commercialization alternatives for an emerging technology. Your project team will be paired with a local inventor, unless you prefer to evaluate a technology of special interest to your team. Experienced entrepreneurs and expects in financing new technology ventures will also address the class.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade
BUSENV 1790 - BUSINESS ENVIRONMENT INTERNSHIP

Minimum Credits: 3  
Maximum Credits: 3  
The business environment internship provides business credits for project assignments that augment a professional business environment work experience.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: Letter Grade

BUSENV 1791 - PROJECTS IN ENTREPRENEURSHIP

Minimum Credits: 3  
Maximum Credits: 3  
This project course will involve an entrepreneurial incubator called the "Blast Furnace" during which you can learn about bringing an idea to the market and what it means to be an entrepreneur. The first part of the class will educate you on what is a good idea and what it means and takes to start a business. The second part of the course provides access to a rich curriculum, mentor and coaches and co-working space to prepare you to create and grow a business.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

BUSENV 1795 - BUSINESS AND POLITICS

Minimum Credits: 3  
Maximum Credits: 3  
The financial crisis, international negotiations toward a climate change agreement, and crises in such industries as pharmaceuticals and even toy manufacturing have highlighted the increasing interdependence of business and government. Such events often also expose the means by which business gains strategic benefits from government regulation. This course will examine methods and patterns of business influence on government, modern approaches to regulatory design, policy-making on issues affecting business, the performance of regulatory agencies, and the behaviors of groups and trade associations in politics.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

BUSBIS 1060 - INTRODUCTION TO INFORMATION SYSTEMS

Minimum Credits: 3  
Maximum Credits: 3  
IT does not matter it's what you do with IT! Business in the 21st century runs on IT. However, competitive advantage seldom comes from having exclusive or proprietary access to a technology. Rather, IT comes from more effectively utilizing technologies to which everyone - including the competition - has access. The implications of this reality are many. First, it is necessary to understand what technologies are available in the marketplace and their capabilities. Next, and far more challenging, it is necessary to understand how these capabilities may positively (or negatively) interact with business strategy. Business transformation is the alignment of process, people, and technology such that IT can both support and innovate business strategies. Given that technologies evolve and develop at a rapid pace, IT is necessary for managers to understand what technologies can do (both established and new) and how IT can be leveraged to create real value.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: College of Business Admin; LEVEL: Sophomore, Junior, Senior

BUSBIS 1600 - TECHNOLOGY-ENABLED BUSINESS TRANSFORMATION
It does not matter it's what you do with it! Business in the 21st century runs on it. However, competitive advantage seldom comes from having exclusive or proprietary access to a technology. Rather, it comes from more effectively utilizing technologies to which everyone - including the competition - has access. The implications of this reality are many. First, it is necessary to understand what technologies are available in the marketplace and their capabilities. Next, and far more challenging, it is necessary to understand how these capabilities may positively (or negatively) interact with business strategy. Business transformation is the alignment of process, people, and technology such that it can both support and innovate business strategies. Given that technologies evolve and develop at a rapid pace, it is necessary for managers to understand what technologies can do (both established and new) and how it can be leveraged to create real value.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Accounting(BSB), Finance(BSB), General Management(BSB), Global Management(BSBA), Marketing(BSB), Business Information Systems(BSB), Human Resources Management, Human Resources Management(BSB), Supply Chain Management(BSB) and undeclared CBA Majors

**BUSBIS 1605 - DATABASE MANAGEMENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Topics covered include development of enterprise-wide data models using entity-relationship diagrams and semantic data models, logical design and implementation of relational databases, SQL, elements of data structures, and basic issues in the management of the corporate data resource.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Accounting(BSB), Finance(BSB), General Management(BSB), Global Management(BSBA), Marketing(BSB), Business Information Systems(BSB), Human Resources Management, Human Resources Management(BSB), Supply Chain Management(BSB) and undeclared CBA Majors

**BUSBIS 1615 - BUSINESS INFORMATION SYSTEMS INTERNSHIP**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The business information systems internship provides the business credits for project assignments that augment a professional BIS work experience.  
**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit  
**Course Requirements:** PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSBIS 1620 - BUSINESS INFORMATION SYSTEMS INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
An independent study course for students desiring to pursue in greater depth a specific set of business information systems issues or problems to which they have been introduced in other business information systems courses. The course involves directed reading and research under the guidance of a full-time faculty member.  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSBIS 1625 - ELECTRONIC COMMERCE**
Minimum Credits: 3
Maximum Credits: 3
This course will cover: (1) electronic business, defined as the use of internet and related communication technologies for organizational communication, coordination, and management of the firm; (2) electronic commerce, defined as the process of buying and selling goods and services electronically; and (3) societal implications of the new technologies. Students will be evaluated on the basis of class participation, assignments, quizzes, exams, and a business plan where students propose e-commerce solutions to tackle specific organizational or business problems and opportunities.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Accounting(BSB), Finance(BSB), General Management(BSB), Global Management(BSBA), Marketing(BSB), Business Information Systems(BSB), Human Resources Management, Human Resources Management(BSB), Supply Chain Management(BSB) and undeclared CBA Majors

BUSBIS 1630 - PROJECT MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Planning, organizing, staffing, and controlling projects requires traditional management skills as well as an appreciation of the tools, techniques, and practices unique to project management. This course starts with an overview of project management concepts, and then focuses on project planning, estimating, monitoring, and controlling. It also covers topics related to being an effective project leader and managing project teams. The project management institute (PMI), a professional organization for project managers, has produced a guide to the project management body of knowledge, which documents the knowledge and practices needed by today's project managers. This guide, along with current research and management trends related to project management, provide the framework for material covered in this class.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Accounting(BSB), Finance(BSB), General Management(BSB), Global Management(BSBA), Marketing(BSB), Business Information Systems(BSB), Human Resources Management, Human Resources Management(BSB), Supply Chain Management(BSB) and undeclared CBA Majors

BUSBIS 1635 - INFORMATION TECHNOLOGY SYSTEMS IN SUPPLY CHAINS

Minimum Credits: 3
Maximum Credits: 3
This course examines the advantages and complexities of ERP software and demonstrates how the system can improve processes and streamline operations as applied toward a global supply chain. ERP systems provide a competitive advantage for a company by allowing the management of different functions and processes in one single corporate information system, providing access to real-time data within the company, enabling greater business agility and strategic decisions. Accordingly, information technology systems in supply chains has been designed to provide students with: strong knowledge of enterprise resource planning (ERP) systems and how companies leverage ERP software to manage global supply chains. Hands-on experience with the execution of supply chain business processes in sap, an industry leader in ERP business software. Practical skills, acquired through experience-based learning activities, which will make students more effective working in a collaborative, global, virtual business world.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Accounting(BSB), Finance(BSB), General Management(BSB), Global Management(BSBA), Marketing(BSB), Business Information Systems(BSB), Human Resources Management, Human Resources Management(BSB), Supply Chain Management(BSB) and undeclared CBA Majors

BUSBIS 1640 - IT ARCHITECTURE AND PLATFORMS

Minimum Credits: 3
Maximum Credits: 3
There is no such thing as a technology decision. There are only business decisions. The options and issues affecting the deployment and utilization of business information systems have grown in number and greatly increased in complexity since the internet and concomitant technologies have
become the most important de-facto standards for business computing and networking. Business people who are involved in technology selection and deployment decisions need a basic knowledge of these areas as well as an understanding the value, costs and benefits they might offer to a business. They also must be able to find out about and evaluate new or emerging technologies and issues that could have relevance in their business situations. They then need to be able to explain all of this to other business people - in business terms. This course will utilize: lectures and presentations by the instructor and outside speakers to present current and relevant architectures and issues that affect businesses deploying information systems; full-length case studies and class discussion to facilitate the examination of the business implications of and the context in which these system deployment factors are involved; team projects to give the students experience in researching, understanding, evaluating and explaining information technologies and issues within a business context.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared

**BUSBIS 1645 - INFORMATION SYSTEMS ETHICS**

Minimum Credits: 3  
Maximum Credits: 3  
This course provides an overview of ethics concepts and decision-making as they are related to Information Systems and Computing. Emphasis is placed on the study of ethical situations and responsibilities of IS professionals around current and emerging technologies in a global setting. Research papers, Case studies and discussion of current ethical events around technology will be used to facilitate discussions in areas including, but not limited to: Cloud Computing, Data protection, Cyber Security, The Digital Divide, Social Media, Intellectual Property, Whistleblowing, Professional Codes of Conduct, Professional liability, Internet freedom in computing and international laws and governance. Invited Subject Matter Experts will conduct informative sessions on key subject matter areas aligned with the course content.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**BUSMIS 1060 - INTRODUCTION TO INFORMATION SYSTEMS**

Minimum Credits: 3  
Maximum Credits: 3  
IT does not matter it's what you do with IT! Business in the 21st century runs on IT. However, competitive advantage seldom comes from having exclusive or proprietary access to a technology. Rather, IT comes from more effectively utilizing technologies to which everyone - including the competition - has access. The implications of this reality are many. First, it is necessary to understand what technologies are available in the marketplace and their capabilities. Next, and far more challenging, it is necessary to understand how these capabilities may positively (or negatively) interact with business strategy. Business transformation is the alignment of process, people, and technology such that IT can both support and innovate business strategies. Given that technologies evolve and develop at a rapid pace, IT is necessary for managers to understand what technologies can do (both established and new) and how IT can be leveraged to create real value.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: College of Business Admin; LEVEL: Sophomore, Junior, Senior

**BUSORC 1020 - ORGANIZATIONAL BEHAVIOR**

Minimum Credits: 3  
Maximum Credits: 3  
Provides an overview of topics and concepts in the field of organizational behavior. Emphasis is on developing a theoretical grasp of issues and problems as well as an understanding of the practical implications of various theories of human behavior at work. Specific topics include leadership, motivation, teamwork, career issues, work roles, job enrichment, employee participation, and work and non-work integration.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: College of Business Admin; LVL: So, Jr, Sr
BUSORG 1021 - ORGANIZATIONAL BEHAVIOR HONORS +1

Minimum Credits: 1  
Maximum Credits: 1  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

BUSORG 1101 - FUNDAMENTALS OF BUSINESS COMMUNICATION

Minimum Credits: 3  
Maximum Credits: 3  
Provides conceptual foundations and training in key communication skills essential for a business professional's effectiveness. Develops skills in oral presentation, interpersonal communication, and communication in teams as applied in business settings.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors ; LVL: So, Jr, Sr

BUSORG 1640 - THE ENTREPRENEURSHIP PROCESS

Minimum Credits: 3  
Maximum Credits: 3  
Emphasis will be placed on business principles vital to the entrepreneurship process, including idea generation, feasibility analysis, the integration of the functional areas of business (strategy, marketing, finance and accounting), building a new venture team, securing financing and protecting intellectual property. Through case studies, video clips and visiting entrepreneurs, these principles will be contextualized with real-life entrepreneurial successes and failures.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSORG 1645 - CORPORATE ENTREPRENEURSHIP

Minimum Credits: 3  
Maximum Credits: 3  
The course concentrates around the question: how do companies strategically manage technology & innovation? The goal is to provide theories and methodologies relevant to the management of innovation which will help achieve a sustainable competitive advantage for firms. Students will have to apply ideas, concepts, tools, and frameworks introduced in the course to real world cases. They will be challenged to develop and defend their opinions in matters that are not always straightforward.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors ; LVL: Jr or Sr

BUSORG 1650 - ISSUES IN CAREER MANAGEMENT

Minimum Credits: 3  
Maximum Credits: 3  
Focuses on the issue of careers in organizations or the sequences of jobs and occupations that a person will hold over his or her lifetime. Examines a variety of perspectives on career management. Focuses on the individual and organizational factors in career development by addressing issues such
as career planning, job choice, work socialization, career stages, mentoring and work and family concerns.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSORG 1020 (MIN GRADE 'C'); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSORG 1655 - INTERNATIONAL DIMENSIONS OF ORGANIZATIONAL BEHAVIOR**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Provides an introduction to organizational behavior in a global context. Emphasis is on applying core organizational behavior concepts such as leadership, motivation, and group processes, as well as more contemporary topics such as cultural diversity and expatriation to workers in Europe, Asia, and the Americas. Develops an understanding of culture and cross-cultural differences and an awareness of the key skills needed to interact effectively in cross-cultural settings.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSORG 1020; PLAN: International Business (CPIB-CR1) or Global Management (BSBA)

**BUSORG 1660 - MANAGING DIVERSITY IN ORGANIZATIONS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Examines the similarities and differences in the work experiences of men and women within organizations. Also examines some of the individual and organizational consequences of gender and work. Topics include gender role attitudes, occupational segregation, gender and leadership, sexual behavior within the workplace, career mobility and workforce diversity.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSORG 1020 (MIN GRAD 'C'); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSORG 1661 - INTERPERSONAL SKILLS FOR MANAGERS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Management of organization design and development. Review internal and external organizational factors such as environmental, size technology, power, politics, strategy, human resources, job design, and culture that influence an organization. Entails a critical review of classical and contemporary theories of organization using multiple perspectives. To enhance understanding will look at organization metaphorically using a system's perspective.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**BUSORG 1670 - ORGANIZATIONAL BEHAVIOR INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
An independent study course for students desiring to pursue in greater depth a specific set of organizational behavior issues or problems to which they have been introduced in other organizational behavior courses. The course involves directed reading and research under the guidance of a full time faculty member.

**Academic Career:** Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

BUSORG 1701 - SOCIAL ENTREPRENEURSHIP

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSORG 1703 - ENTREPRENEURIAL PROCESS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSERV 1350 - ETHICS AND LEADERSHIP IN ORGANIZATIONS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSERV 1355 - BUSINESS ETHICS AND STAKEHOLDER ENGAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSERV 1360 - PRINCIPLES AND PRACTICES OF SOCIAL RESPONSIBILITY IN BUSINESS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSERV 1365 - LEADERSHIP CAPSTONE EXPERIENCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSERV 1910 - INTRODUCTION TO BUSINESS
Minimum Credits: 3  
Maximum Credits: 3  
Provides an overview of how American business operates in our economy. Emphasis is given to the study of management, planning, personnel, finance, and marketing, and how these are interrelated within our business system. The activities in each of these functions are discussed, role of the participants analyzed, and underlying theories examined. The student should gain an insight into the primary activities in business and an understanding of their practical applications.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

BUSERV 1915 - INTRODUCTION TO MANAGEMENT

Minimum Credits: 3  
Maximum Credits: 3  
Introduces the basic roles of managers such as planning, organizing, controlling, staffing, and directing. Aspects of leadership, motivation, organization structure, and the interdependence of functional subsystems will also be covered. Emphasis is placed on management practice.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

BUSERV 1920 - FINANCIAL ACCOUNTING

Minimum Credits: 3  
Maximum Credits: 3  
A study of accounting and financial concepts pertaining to the business enterprise, with emphasis on the understanding and use of accounting and financial data. This course develops the ability to analyze and interpret internal and external financial developments as they relate to a business enterprise and provides an operational knowledge of the accounting cycle.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

BUSERV 1925 - COST ACCOUNTING

Minimum Credits: 3  
Maximum Credits: 3  
This course has three objectives: (1) to develop an understanding of the broad range of cost accounting concepts underlying cost determination and analysis; (2) to provide familiarity with the controls that are afforded in the application of cost accounting concepts; and (3) to create an awareness of how cost accounting can contribute to decision-making and planning. These objectives are accomplished through analyses of the behavior and economic data within the firm, evaluation of actual and standard cost systems, and the examination of cost measurements.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREG: BUSERV 1920; MIN GRADE 'C'

BUSERV 1940 - MARKETING FUNDAMENTALS

Minimum Credits: 3  
Maximum Credits: 3  
Provides an understanding of the roles of marketing in the economy and the firm, and develops a rationale for a marketing perspective as a guide to organizational and individual actions.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade
BUSERV 1955 - PRINCIPLES OF SELLING

Minimum Credits: 3
Maximum Credits: 3
Examines aspects of personal selling and the links between the seller and the buyer. The establishment of rapport through the development of interpersonal skills and the translation of company or self-objectives into decisions that motivate the sales force are included. Methods of recruiting and selecting the salesperson, training the salesperson, problems of evaluation, establishing personal credibility, handling objections, closing a sale, establishing one's personal goals, and objectives and procedures for self-management are included.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSERV 1975 - FINANCIAL PLANNING FOR THE INDIVIDUAL

Minimum Credits: 3
Maximum Credits: 3
Course provides an overview of the personal financing planning process; developing personal financial goals, analytical tools used in financial planning, individual risk assessment and management techniques, investment and portfolio analysis, individual tax planning and management, employee benefits and retirement planning, and estate planning.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

BUSERV 1985 - SMALL BUSINESS MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Introduces basic principles and practices for successful management of a small business. Topics include the economic environment, development of personal and organization objectives, marketing production, finance, credit, accounting, business law, and records management.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CDACCT 6030 - FINANCIAL ACCOUNTING

Minimum Credits: 3
Maximum Credits: 3
Helps students become informed users of firms' external financial reports. The basic structure and contents of such reports and the process by which they are prepared will be studied. Discussion will involve what items are included in the reports, how such items are measured, and how various economic events affect them. An understanding of what can be inferred from the reports about past performance, present position, and future prospects of the firms will be developed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ECON 0102 or 0103 or 0105 or 0110 or 0115 or 0120; MIN GRADE: 'C' For Listed Courses; PLAN: Accounting (CERT)

CDACCT 6040 - MANAGERIAL ACCOUNTING

Minimum Credits: 3
Maximum Credits: 3
Introduces students to the basic terminology and concepts of cost accounting, and provides an introductory coverage of product costing, cost allocation, budgetary control, responsibility accounting, and the use of cost information in resource allocation and other managerial decisions. Textbook material and real world examples are used to engage students in extensive problem solving.
CDACCT 6204 - INTERMEDIATE FINANCIAL REPORTING 1

Minimum Credits: 3
Maximum Credits: 3
Covers the conceptual framework of financial accounting and its influence on generally accepted accounting principles (GAAP), with special emphasis on the valuation of assets, and measurement of income. Requirements include reading the original pronouncements on GAAP, making oral presentations, and writing short position papers on various accounting issues of current interest.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 0030 or BUSERV 1920 or CDACCT 6030 or MGMT 0022 or BUS 0115 or ACCT 0201; PLAN: Accounting (CERT)

CDACCT 6205 - INTERMEDIATE FINANCIAL REPORTING 2

Minimum Credits: 3
Maximum Credits: 3
Topics covered include valuation of liabilities, owners equity, cash flow statements, and disclosure outside the primary financial statements. Like intermediate financial reporting 1, this course also engages students as active participants in the learning process.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (BUSACC 0030 or BUSERV 1920 or CDACCT 6030 or MGMT 0022 or BUS 0115 or ACCT 0201) and (BUSACC 0040 or BUSERV 1925 or CDACCT 6040 or MGMT 0023 or BUS 1110 or ACCT 0202); MIN GRAD: ‘C’ For Listed Courses; PLAN: Accounting (CERT)

CDACCT 6210 - FINANCIAL STATEMENT ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Financial statement analysis focuses on the evaluation of publicly traded company financial statements and related note disclosures as well as the correlation of this historic financial performance to the company's stock prices. This course will assist students' development of a systematic approach to analyzing reported financial data and understanding the underlying risks and possible inconsistencies among comparative companies. Requirements of the course include interim exams and written and oral presentations of analysis.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 1204 or CDACCT 6204; PLAN: Accounting (CERT)

CDACCT 6216 - ADVANCED FINANCIAL ACCOUNTING

Minimum Credits: 3
Maximum Credits: 3
Covers topics that are of particular interest to financial report preparers and auditors. Special emphasis placed on accounting for business combinations and consolidated financial reporting. Other topics include international accounting, accounting for partnerships, and accounting by fiduciaries.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 1205 or CDACCT 6205; PLAN: Accounting (CERT)

CDACCT 6221 - STRATEGIC COST MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Topics covered include how product cost measurement affects resource allocation decisions; how to design modern cost systems; the strategic role of cost information and the relationship between process improvement and cost reduction; performance measurement and organizational transformation for value creation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 0030 or BUSERV 1920 or CDACCT 6030 or MGMT 0022 or BUS 0115 or ACCT 0201) and (BUSACC 0040 or BUSERV 1925 or CDACCT 6040 or MGMT 0023 or BUS 1110 or ACCT 0202); MIN GRAD: ‘C’ For Listed Courses; PLAN: Accounting (CERT)

CDACCT 6236 - ACCOUNTING INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Deals with the design and implementation of accounting information systems and their ability to collect data on the activities of the organization, to accumulate and summarize it, and to make the information available to managers for analysis, decision making, and control. Special emphasis is placed on the problems inherent to this effort.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC 0030 or BUSERV 1920 or CDACCT 6030 or MGMT 0022 or BUS 0115 or ACCT 0201) and (BUSACC 0040 or BUSERV 1925 or CDACCT 6040 or MGMT 0023 or BUS 1110 or ACCT 0202); MIN GRAD: ‘C’ For Listed Courses; PLAN: Accounting (CERT)

CDACCT 6238 - AUDITING

Minimum Credits: 3
Maximum Credits: 3
Introduces the auditing process and profession. Main topics include the nature and purpose of auditing, auditing standards, professional conduct, auditor legal liability, and approaches in financial statements. Emphasizes a risk-based approach to selecting appropriate auditing techniques. Examines auditor's decision process relating to internal control assessment, audit decision process relating to internal control assessment, audit sampling, and obtaining audit evidence about financial accounts. Also examines extent of auditor's responsibility to uncover fraud.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSACC1205 or CDACCT 6205; CREQ: BUSACC 1236 or CDACCT 6236; PLAN: Accounting (CERT)

CDACCT 6242 - INDIVIDUAL TAX ACCOUNTING AND PLANNING

Minimum Credits: 3
Maximum Credits: 3
This course focuses on individual tax return preparation and planning. Students will learn how to calculate the taxes associated with a variety of personal, investment, property, and sole-proprietorship transactions. Concepts will be reinforced through the preparation of actual tax returns that reflect different combinations of such transactions. Students will develop tax planning skills by considering how various transactions can be restructured to minimize the current or future tax liability.
Academic Career: Undergraduate
Course Component: Lecture
CHE 0035 - INTRODUCTRY CHEMICAL ENGINEERING

Minimum Credits: 4
Maximum Credits: 4
The principles of conservation of mass and energy are applied to the analysis of chemical processes. Included are material balance for multiple unit processes with recycle, p-v-t properties of gases and gas-vapor mixtures, thermochemistry, combined material and energy balances, and vapor-liquid equilibrium.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: BUSACC 1205 or CDACCT 6205; PLAN: Accounting (CERT)

CHE 0036 - CHEMCL ENGRNG THERMODYNAMICS 1

Minimum Credits: 3
Maximum Credits: 3
Development of the laws of thermodynamics using a macroscopic approach. Fundamental concepts are stressed. Emphasis is placed on chemical engineering applications in problem recitation sessions. Concepts of work, heat, internal energy, potential energy, kinetic energy, enthalpy, entropy, and free energy are developed. Thermodynamic properties and equations of state are defined.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: Swanson School of Engineering

CHE 0100 - FOUNDATIONS OF CHEMICAL ENGR

Minimum Credits: 6
Maximum Credits: 6
This course combines elements of mass and energy balances, thermodynamics, separations, and product design in order to set the foundation for the remainder of the chemical engineering curriculum. This course introduces chemical engineering problem solving techniques from both a (traditional) process-centric viewpoint as well as a product centric viewpoint. The course will span from theoretical (basic thermodynamics) to applied (separations) allowing a simple route to problem-based learning of difficult theoretical concepts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (CHEM 0120 or 0420 or 0770 or 0970 or 0102 or 0112) and (MATH 0230 or 0235 or 0150 or 0231) and (PHYS 0174 or 0475 or 0150 or 0201); CREQ: CHE 0101; PROG: Swanson School of Engineering

CHE 0101 - FOUNDATIONS OF CHE LABORATORY

Minimum Credits: 1
Maximum Credits: 1
The lab course associated with CHE 0100. Experiments and lectures will reinforce the content of CHE 0100.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: CREQ: CHE 0100; PROG: Swanson School of Engineering

CHE 0200 - CHEMICAL ENGINEERING THERMODYNAMICS
This course combines the ideas from both pure and multicomponent thermodynamics. It introduces molecular insight and the tools (including commercial software) for solving both simple and complex problems in phase and chemical equilibria. The course will have a strong focus on multiscale analysis, for example, covering intermolecular potentials (molecular-scale) to aid students in choosing equations of state for novel materials (macro-scale). Advanced topics covered include interfacial behavior, adsorption, and osmotic equilibrium.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (CHEM 0120 or 0420 or 0970 or 0102 or 0112) and (MATH 0230 or 0235 or 0150 or 0231) and (PHYS 0174 or 0475 or 0150 or 0201); CREQ: CHE 0201 and 0214 ; PLAN: Chemical Engineering (CHE-BSE)

**CHE 0201 - CHE THERMODYNAMICS LABORATORY**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
Laboratory corresponding to CHE 0200.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: CHE 0200; PLAN: Chemical Engineering (CHE-BSE)

**CHE 0214 - INTRODUCTION TO CHEMICAL PRODUCT DESIGN**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Traditionally, chemical product design has focused on a set procedure for product development from conception to development and testing and finally the launching of the product. Unfortunately, this model which does not keep in mind the values or needs of the customer has resulted in a high number of failures for new product launches. What skills are thus needed in order to be entrepreneurial and succeed in the development of new chemical products within industry today? This course examines the initial stages on how to approach chemical product design from an innovation perspective complete with the provision of the necessary technical skills to get the job done while placing an emphasis on the business and entrepreneurial skills required to be successful in the chemical product design business.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (CHEM 0102 or 0112 or 0120 or 0420 or 0770 or 0970) and (Math 0150 or 0230 or 0231 or 0235) and (PHYS 0150 or 0174 or 0201 or 0475); CREQ: CHE 0200; Plan: Chemical Engineering (BSE)

**CHE 0300 - TRANSPORT PHENOMENA**

**Minimum Credits:** 6  
**Maximum Credits:** 6  
Stresses analogies between the three modes of transport phenomena; momentum, mass, and heat transport. Covers from the molecular origins of transport up through continuum descriptions, as well as macroscopic balances. Reynolds and Colburn Analogies in Boundary-Layer Flow as well as direct comparison of linear transport relations, such as fluid drag and mass/heat convection will be a primary focus. Problems ranging from (traditional) packed bed reactors to micro-fluidics or micro-electromechanical systems will also be discussed.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: CHE 0100 and (PHYS 0175 or 0152 or 0202 or 0476) and (MATH 0290 or 0250 or 1270); CREQ: CHE 0301; PROG: Swanson School of Engineering

**CHE 0301 - TRANSPORT PHENOMENA LABORATORY**
Minimum Credits: 1  
Maximum Credits: 1  
The lab course associated with CHE 0300. Experiments and lectures will reinforce the content of CHE 0300.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade  
Course Requirements: CREQ: CHE 0300; PROG: Swanson School of Engineering

CHE 0314 - TAKING PRODUCTS TO MARKET: THE NEXT STEP IN CHEMICAL PRODUCT DESIGN

Minimum Credits: 3  
Maximum Credits: 3  
Traditionally, chemical product design has focused on a set procedure for product development from conception to development and testing and finally the launching of the product. Unfortunately, this model which does not keep in mind the values or needs of the customer has resulted in a high number of failures for new product launches. What skills are thus needed in order to be entrepreneurial and succeed in the development of new chemical products within industry today? This course is the next step in the chemical product design sequence and focuses on chemical product design and the development of business plans.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: CHE 0100 and 0214 and (PHYS 0152 or 0175 or 0202 or 0476) and (MATH 0250 or 0290 or 1270); CREQ: CHE 0300

CHE 0400 - REACTIVE PROCESS ENGINEERING

Minimum Credits: 5  
Maximum Credits: 5  
This course integrates reactor design, reaction kinetics, and advanced separation processes to allow the comprehensive study of systems ranging from polymerization reactors to enzyme-catalyzed metabolism to (bio-) artificial organs. Coverage includes integrating multiple topics, such as chemistry, physics, biochemistry/medicine and reactor engineering. Furthermore, it addresses all length scales from the molecular level to the reactor level to the full systems level. Both theory and experiment will be highlighted and detailed simulations will be included.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (CHE 0100 and 0200) and (PHYS 0175 or 0475 or 0202 or 0152) and (CHEM 0310 or 0206 or 0231) and MATH 0290; CREQ: CHE 0401; PLAN: Chemical Engineering (BSE)

CHE 0401 - REACTIVE PROCESS ENGINEERING LABORATORY

Minimum Credits: 1  
Maximum Credits: 1  
Laboratory corresponding to CHE 0400.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade  
Course Requirements: CREQ: CHE 0400; PROG: Swanson School of Engineering

CHE 0414 - PRODUCT PROTOTYPING FOR CHEMICAL ENGINEERS

Minimum Credits: 3  
Maximum Credits: 3  
In this course, students working in product teams, will learn how to translate their product ideas to tangible prototypes. Included will be modules on design of screening experiments (including equipment), use of software to aid molecular design, and creation of formulations. Ultimately student groups are expected to create a working prototype by semester's end.
CHE 0500 - SYSTEMS ENGINEERING 1: DYNAMICS AND MODELING

Minimum Credits: 5
Maximum Credits: 5
The dynamics and modeling class is the first of a two-part systems engineering sequence. This course covers dynamical analysis of process systems, process control fundamentals, feedback, basic process modeling, and optimization. The course covers industrial-style examples from a multi-scale perspective by incorporating molecular insight into process variable calculations and large-scale information through process simulation (computer-aided design) software.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CHE 0314; PLAN: Chemical Engineering (CHE-BSE)

CHE 0501 - SYSTEMS ENGINEERING 1: DYNAMICS AND MODELING LABORATORY

Minimum Credits: 1
Maximum Credits: 1
Laboratory experience accompanying CHE 0500. Both physical and computational experiments will be performed.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: CREQ: CHE 0500; PROG: Swanson School of Engineering

CHE 0601 - SYSTEMS ENGINEERING 2: DESIGN LABORATORY

Minimum Credits: 1
Maximum Credits: 1
The lab course associated with CHE 0600. Experiments and lectures will reinforce the content of CHE 0600.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SU3 Elective Basis
Course Requirements: CREQ: CHE 0613; PROG: Swanson School of Engineering

CHE 0602 - CHEMICAL ENGINEERING SAFETY AND ETHICS

Minimum Credits: 2
Maximum Credits: 2
This class will provide the student with a thorough understanding of the fundamentals in workplace health and safety with emphasis on chemical industry applications. This will be accomplished through presentation a discussion of critical issues as well as the application of these principles to the senior design project. This course will also cover ethical situations likely to arise in the chemical plant environment.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: 0400; CREQ: CHE 0613; PROG: Swanson School of Engineering

CHE 0613 - SYSTEM ENGINEERING 2: PROCESS DESIGN

Minimum Credits: 5
Maximum Credits: 5
This course integrates aspects of previous chemical engineering courses into the design of a complete chemical plant including the use of computer process simulation, pinch technology, and discounted cash flow economic analysis. The detailed design of chemical engineering units/processes is carried out for all aspects of the plant.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: CHE 0300 and 0400; PROG: Swanson School of Engineering

**CHE 0614 - SYSTEMS ENGINEERING 2: PRODUCT DESIGN**

- **Minimum Credits:** 2  
- **Maximum Credits:** 2

This course will go through the steps to successful product design and contrast these with traditional process design methods. Good product design incorporates customer needs, manufacturing flexibility, economy, sustainability and molecular design.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CHE 0300 and 0400; PROG: Swanson School of Engineering

**CHE 1008 - INTRODCTN TO STAGED SEPARATIONS**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3

Unified treatment of separation processes which are carried out in staged equipment. Computer solutions are emphasized. Binary distillation, calculations using graphical methods, multicomponent distillation of ideal and non ideal mixtures, liquid extraction, and differential distillation are studied.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PROG: Swanson School of Engineering

**CHE 1015 - MOLECULAR CHEMICAL AND NUCLEAR REACTION KINETICS**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

**CHE 1017 - CHEMICAL ENERGY AND THE NATURE OF THE CHEMICAL BOND**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3

An overview of energy transformations arising from chemical bonding in chemical catalysis, electrocatalysis, and combustion. Students will be introduced to qualitative quantum chemistry concepts: potential energy and kinetic energy operators, wave functions, electron correlation, and GVB diagrams for analysis of chemical bonds and molecular structures in energy transformations. Students are expected to have completed Undergraduate physical chemistry course on quantum mechanics or equivalent or have prior consent from the instructor.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PROG: Swanson School of Engineering

**CHE 1085 - DEPARTMENTAL SEMINAR**
The departmental seminars are designed to acquaint the student with aspects of engineering which are normally not encountered in classes.

**Minimum Credits:** 0  
**Maximum Credits:** 0

**Academic Career:** Undergraduate  
**Course Component:** Colloquium  
**Grade Component:** H/S/U Basis  
**Course Requirements:** PROG: Swanson School of Engineering

**CHE 1097 - SPECIAL PROJECT**

**Minimum Credits:** 1  
**Maximum Credits:** 12

Student develops an individual project under supervision of a faculty member. Project may be experimental, design and oriented, or instructional. A written report is prepared.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** Letter Grade

**CHE 1530 - BIOCHEMISTRY FOR ENGINEERS**

**Minimum Credits:** 3  
**Maximum Credits:** 3

The basic principles of biochemistry are presented and discussed.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PREQ: CHE 0100 and CHEM 0310; PLAN: Chemical Engineering (BSE)

**CHE 1532 - BIOSEPARATIONS**

**Minimum Credits:** 3  
**Maximum Credits:** 3

Bio separation processes are critical for purification of peptides and proteins, nucleic acids, vaccines and viral vectors, and a host of other biomolecules of interest in pharmaceutical and biotechnology industries. This course will focus on downstream bioprocessing for separation and purification of recombinant and natural proteins, DNA, and viruses including viral vectors for gene therapy applications. Ultrafiltration, tangential or cross flow systems, precipitation, and chromatography-based processes will be examined. Ion exchange and affinity chromatography will be discussed in detail. Application of genomic manipulation and proteomics for improvements in bio separation processes will also be covered.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PREQ: CHE 0300 or BIOENG 1220; PROG: Swanson School of Engineering

**CHE 1533 - CONTROLLED DRUG DELIVERY**

**Minimum Credits:** 3  
**Maximum Credits:** 3

This course will provide students with a basic understanding of the engineering of controlled drug delivery systems, which stands as a 114 billion dollar industry. To this end, we will focus on topics at the interface between engineering and medicine such as biomaterials, pharmacokinetics, polymer chemistry, reaction kinetics, and biological transport phenomena. Design of transdermal, aerosol, oral, bio-mems, gene delivery, and targeted cellular delivery, will be reviewed with emphasis being placed upon us FDA regulatory considerations and the relevant physiological milieu.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade
Course Requirements: [PREQ: CHE 0300 and 0400 and (1530 or BIOSC 1000 or CHEM 1810); LVL: Sr; PLAN: Chemical Engineering (BSE)] or [BIOENG 1220; LVL: Sr; PLAN: Bioengineering (BSE)]

CHE 1754 - PRINCIPLES OF POLYMER ENGINEERING

Minimum Credits: 3  
Maximum Credits: 3  
This course deals with the elements of polymer science and engineering necessary for entry-level understanding of polymer technology. While the chemistry determines macromolecular microstructure, an understanding of polymer manufacture and processing requires the addition of physical chemistry and transport phenomena. The essential material covered in this class includes the elements of polymers thermodynamics, rheology, mechanical behavior, and equipment design.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PREQ: CHE 0200 or BIOENG 1210 or MEMS 1056; PLAN: Chemical Engineering (BSE)

CHE 1870 - SOLIDS PROCESSING AND TRANSPORT

Minimum Credits: 3  
Maximum Credits: 3  
Particle technology affects as much as 80% of the chemical process industry, yet is often omitted from the undergraduate curriculum of chemical engineers. This course is designed to give advanced undergraduates as well as early-term graduate students an introduction to this rich and diverse field. Topics will range from fundamentals (particle classification, properties, and flow) to applied (hopper design, mixing, etc. Industry related examples and designs with be presented.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PROG: Swanson School of Engineering

CHE 1933 - ENGINEERING A CRAFT BREWERY

Minimum Credits: 3  
Maximum Credits: 3  
This course will introduce students to the science of brewing and the engineering required to design and operate a craft brewery. Students will apply concepts from mass and energy balances, fluid dynamics and heat transfer, and reaction engineering to study the unit operations required to convert grain, water, yeast, and hops into beer. Students will also develop product analysis and product design skills to justify brewing choices based upon brewing science, engineering, and economic considerations.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

CHEM 0100 - PREPARATION GENERAL CHEMISTRY

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed for those students who intend to take chemistry 0110 and 0120, but whose science and mathematical backgrounds are judged by their advisors to be relatively weak. The course emphasizes stoichiometry (chemical calculations), chemical equations, gas laws, elementary atomic structure and periodic properties of elements.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

CHEM 0110 - GENERAL CHEMISTRY 1

1411
Chemistry 0110 and 0120 comprise a two-term introduction to the fundamental properties of matter. The courses emphasize applications to industrial and environmental chemistry and biochemistry. CHEM 0110 covers stoichiometry, the properties of solids, liquids and gases, thermochemistry and the electronic structure of atoms and molecules.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CHEM 0120 - GENERAL CHEMISTRY 2**

Minimum Credits: 4  
Maximum Credits: 4  
Chemistry 0110 and 0120 comprise a two-term introduction to the fundamental properties of matter. The courses emphasize applications to industrial and environmental chemistry and biochemistry. CHEM 0110 covers stoichiometry, the properties of solids, liquids and gases, thermochemistry and the electronic structure of atoms and molecules.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: (CHEM 0110 or 0710 or 0760 or 0960 or 0101) or (CHEM 0410 and 0430) or (CHEM 0111 and 0113)

**CHEM 0250 - INTRODUCTION TO ANALYTICAL CHEMISTRY**

Minimum Credits: 3  
Maximum Credits: 3  
This course is concerned with the rigorous treatment of equilibria that are of analytical importance and with an introduction into electroanalytical methods, emission and absorption spectrophotometry, and modern separation methods, particularly chromatography.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: CHEM 0120 or 0720 or 0770 or 0970 or 0102 or (CHEM 0112 and 0114)

**CHEM 0260 - INTRODUCTION TO ANALYTICAL CHEMISTRY LAB**

Minimum Credits: 1  
Maximum Credits: 1  
The primary objectives of this course are to introduce the student to current analytical methods and to cultivate sound experimental technique. Laboratory work includes ion exchange separations, complexometric and potentiometric acid-base titrations, and absorption spectrophotometry.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** CREQ: CHEM 0250 or 0201 or 0325

**CHEM 0310 - ORGANIC CHEMISTRY 1**

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to theory and practice of organic chemistry through study of structural principles, reaction mechanisms, and synthesis leading toward end of second term, when complex molecules of biological interest are discussed. Basic goals of course are to develop appreciation and skill in methods of molecular analysis which have made organic chemistry such a powerful intellectual discipline. Course will prepare student for work in advanced topics of organic chemistry, biochemistry, chemical engineering and health related sciences.

**Academic Career:** Undergraduate  
**Course Component:** Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CHEM 0120 or 0720 or 0770 or 0970 or 0102 or CHEM 0420) or (CHEM 0112 and 0114)

CHEM 0320 - ORGANIC CHEMISTRY 2

Minimum Credits: 3
Maximum Credits: 3
An introduction to theory and practice of organic chemistry through study of structural principles, reaction mechanisms, and synthesis leading toward end of second term, when complex molecules of biological interest are discussed. Basic goals of course are to develop appreciation and skill in methods of molecular analysis which have made organic chemistry such a powerful intellectual discipline. Course will prepare student for work in advanced topics of organic chemistry, biochemistry, chemical engineering and health related sciences.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0310 or 0730 or 0206 or 0231

CHEM 0330 - ORGANIC CHEMISTRY LABORATORY 1

Minimum Credits: 1
Maximum Credits: 1
Chemistry 0330 is devoted to the purification, characterization, and identification of organic molecules using the techniques of recrystallization, distillation, thin-layer, column and gas-liquid chromatography, melting point determination, and infrared and nuclear magnetic resonance spectroscopy.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: CHEM 0310 or 0730 or 0206 or 0231

CHEM 0340 - ORGANIC CHEMISTRY LABORATORY 2

Minimum Credits: 1
Maximum Credits: 1
Chemistry 0340 provides an opportunity to carryout important synthetic reactions discussed in the lecture course along with an introduction to the use of the chemical literature. Reactions are analyzed and products characterized using the skills learned in chemistry 0330.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0330 or 0207 or 0233; CREQ: CHEM 0320 or 0740 or 0208 or 0232

CHEM 0345 - ORGANIC LABORATORY

Minimum Credits: 2
Maximum Credits: 2
This single semester two-credit Organic Laboratory course will provide an introduction to modern organic laboratory techniques used routinely in both industry and academics. The lab will emphasize practical applications of the reactions covered in the Organic 1 and Organic 2 lectures. The goals of the course are to provide students with practical experience in executing and analyzing organic transformations as well as practical experience in modern laboratory techniques.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0310 or 0730; CREQ: CHEM 0740 or 0320

CHEM 0350 - PRINCIPLES OF ORGANIC CHEMISTRY
Minimum Credits: 3
Maximum Credits: 3
A one-semester course in organic chemistry that will introduce students to fundamental principles including molecular structure, organic reactions, and mechanisms. As rigorous as the traditional two-term organic chemistry course, topics are chosen for their relevance to students entering a biological sciences-oriented career.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [CHEM 0120 or 0720 or 0770 or 0970 or (0112 and 0114)] and BIOSC 0150

CHEM 0410 - GENERAL CHEMISTRY 1

Minimum Credits: 3
Maximum Credits: 3
See chemistry 0110. This course is for students who need to take lecture without lab.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHEM 0420 - GENERAL CHEMISTRY 2

Minimum Credits: 3
Maximum Credits: 3
See chemistry 0120. This course is for students who must take lecture without lab.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHEM 0430 - GENERAL CHEMISTRY 1 LABORATORY

Minimum Credits: 1
Maximum Credits: 1
Laboratory that accompanies CHEM 0110.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

CHEM 0440 - GENERAL CHEMISTRY 2 LABORATORY

Minimum Credits: 1
Maximum Credits: 1
Laboratory that accompanies chemistry 0120.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

CHEM 0710 - UHC GENERAL CHEMISTRY 1

Minimum Credits: 4
Maximum Credits: 4
Chemistry 0710 and 0720 comprise a two-term introduction to the fundamental properties of matter. The courses emphasize the fundamental principles of chemistry as exemplified by applications to industrial and environmental chemistry. Chemistry 0710 covers stoichiometry, electronic structure of atoms and molecules, periodic behavior, theories of bonding, and spectroscopy.
Academic Career: Undergraduate
CHEM 0720 - UHC GENERAL CHEMISTRY 2

Minimum Credits: 4  
Maximum Credits: 4
Chemistry 0710 and 0720 comprise a two-term introduction to the fundamental properties of matter. The courses emphasize the fundamental principles of chemistry as exemplified by applications to industrial and environmental chemistry. CHEM 0720 covers the properties of solids, liquids and gases, chemical dynamics and chemical kinetics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CHEM 0110 or 0710 or 0760 or 0960 or 0101) or (CHEM 0410 and 0430) or (CHEM 0111 and 0113)

CHEM 0730 - UHC ORGANIC CHEMISTRY 1

Minimum Credits: 3  
Maximum Credits: 3
An introduction to theory and practice of organic chemistry through study of structural principles, reaction mechanisms, and synthesis leading toward end of second term, when complex molecules of biological interest are discussed. Basic goals of course are to develop appreciation and skill in methods of molecular analysis which have made organic chemistry such a powerful intellectual discipline. Course will prepare student for work in advanced topics of organic chemistry, biochemistry, chemical engineering and health related sciences.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHEM 0740 - UHC ORGANIC CHEMISTRY 2

Minimum Credits: 3  
Maximum Credits: 3
An introduction to theory and practice of organic chemistry through study of structural principles, reaction mechanisms, and synthesis leading toward end of second term, when complex molecules of biological interest are discussed. Basic goals of course are to develop appreciation and skill in methods of molecular analysis which have made organic chemistry such a powerful intellectual discipline. Course will prepare student for work in advanced topics of organic chemistry, biochemistry, chemical engineering and health related sciences.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0310 or 0730 or 0206 or 0231

CHEM 0745 - ORGANIC LABORATORY: ANTIBIOTIC DISCOVERY

Minimum Credits: 2  
Maximum Credits: 2
The two-credit CURE Organic Chemistry Laboratory Course serves as an alternative to the Organic Chemistry Laboratory Course (CHEM 0345). This research-based laboratory course has been developed as part of an integrated 2-semester sequence in collaboration with the Department of Biological Sciences. One major goal of this course is to offer undergraduate students an opportunity to perform authentic scientific research in the laboratory course. This collaborative course sequence engages the students in learning approaches towards antibiotic discovery in order to address the world's current antibiotic crisis. Students start out in the biology course by isolating bacterial strains that display antibiotic activity. This biology course is followed up with the organic chemistry lab course that affords the students the opportunity to develop strategies for antibiotic isolation and purification using chemical separation techniques, and to characterize these unknown antibiotics through spectroscopic techniques commonly used in organic chemistry. Students are encouraged to take the biology Small World course (BIOSC 0067) prior to this CURE Organic Chemistry Lab course. However, the Small World course is not required for the students to enroll in this course.

Academic Career: Undergraduate
CHEM 0755 - UHC Organic Chemistry Lab: Research Exploration

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

CHEM 0760 - UHC GENERAL CHEMISTRY FOR ENGINEERS 1

Minimum Credits: 3
Maximum Credits: 3
Chemistry 0760 and 0770 comprise a two-term introduction to the fundamental properties of matter. The courses emphasize the fundamental principles of chemistry as exemplified by applications to industrial and environmental chemistry. Chemistry 0760 covers stoichiometry, electronic structure of atoms and molecules, periodic behavior, theories of bonding, and spectroscopy.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHEM 0770 - UHC GENERAL CHEMISTRY FOR ENGINEERS 2

Minimum Credits: 4
Maximum Credits: 4
Chemistry 0760 and 0770 comprise a two-term introduction to the fundamental properties of matter. The courses emphasize the fundamental principles of chemistry as exemplified by applications to industrial and environmental chemistry. CHEM 0770 covers the properties of solids, liquids and gases, chemical dynamics and chemical kinetics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CHEM 0110 or 0710 or 0760 or 0960 or 0101) or (CHEM 0410 and 0430) or (CHEM 0111 and 0113)

CHEM 0910 - CHEMICAL PRINCIPAL HEALTH PROFESSENN

Minimum Credits: 4
Maximum Credits: 4
This is a one term course covering general and biological chemistry designed primarily for students enrolled in the school of nursing or preparing for health related professions. The course covers aspects of general chemistry including atomic structure and bonding and equilibria. A brief introduction to organic chemistry including physical properties and representative reactions of common functional groups and finally the chemistry of the major classes biomolecules and metabolism.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: School of Nursing students only.

CHEM 0960 - GENERAL CHEM FOR ENGINEERS 1

Minimum Credits: 3
Maximum Credits: 3
Essentially the same as CHEM 0110, but a total of 3 credits only and has no lab. Enrollment limited to school of engineering students.
Academic Career: Undergraduate
CHEM 0970 - GENERAL CHEM FOR ENGINEERS 2

Minimum Credits: 3  
Maximum Credits: 3  
Essentially the same as CHEM 0120, but a total of 3 credits only. Has lab, but only two lectures per week in contrast to CHEM 0120, which has 3. Enrollment limited to school of engineering.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CHEM 0110 or 0410 or 0710 or 0760 or 0960 or 0101 or (CHEM 0111 and 0113)

CHEM 1000 - MATHEMATICS FOR CHEMISTRY

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PREQ: MATH 0230

CHEM 1010 - SAFETY IN THE CHEMISTRY LABORATORY

Minimum Credits: 1  
Maximum Credits: 1  
This course will introduce students to currently accepted best practices in chemistry laboratory safety. It will do this via weekly sessions given by both academic and industrial leaders in the field. Hands on activities and discussions on topics such as hazard recognition, risk assessment, accident analysis and prevention, and emergency responses will be presented. When possible, the chemical basis of safety will be emphasized.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

CHEM 1020 - READING THE CHEMICAL LITERATURE

Minimum Credits: 2  
Maximum Credits: 2  
This course will provide an introduction to understanding the assembly and function of macromolecules and supramolecular assemblies. The course will emphasize literature readings and team activities that require students to integrate concepts from their core chemistry courses. The goals of this course are: (1) in applying concepts from core chemistry courses to understanding complex supramolecular assemblies and (2) in reading the chemical literature. The Learning Objectives include: (1) Develop the ability to recognize and apply the basic principles learned in physical, organic, and general (inorganic) chemistry to understanding the structural and dynamical properties of macromolecules and supramolecular assemblies. (2) Develop the skills needed to design experimental probes of these processes in complex systems. (3) Learn to leverage the expertise of diverse teams to collectively tackle challenging problems. (4) Learn to construct meaningful hypotheses concerning function in complex systems. (5) Learn to design experiments and computations to test critical hypotheses. (6) Develop intuition about the importance of different molecular timescales and the driving forces for arranging molecules into functional machinery.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

CHEM 1130 - INORGANIC CHEMISTRY
Modern bonding theories are developed to the level that permits some understanding of the effects of structure and bonding on chemical properties. Periodic relationships are discussed and applied to selected families of elements. Emphasis is placed on those aspects of structure, bonding and periodic relationships that are helpful in unifying a large body of chemical knowledge. Selected topics of current interest in inorganic chemistry are discussed.

**CHEM 1140 - ADVANCED INORGANIC LABORATORY**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
Introduces practical techniques for the synthesis and characterization of inorganic and organometallic complexes and materials. Special emphasis on the preparation and characterization of air- and water-sensitive compounds.

**CHEM 1250 - INSTRUMENTAL ANALYSIS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The basic principles and instrumentation of important methods and their application to analysis and research problems. The coverage includes spectroscopic and electrochemical methods and chromatography. Equilibrium and dynamic aspects of each are considered.

**CHEM 1255 - INSTRUMENTAL ANALYSIS LAB**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
The laboratory component of CHEM 1250. Students will be introduced to state of the art instrumentation being used in contemporary analytical chemistry.

**CHEM 1260 - INTERMEDIATE ANALYTICAL CHEMISTRY**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
This course is about becoming a professional. Students read the current scientific literature on a topic of current interest in analytical chemistry or a related area (spectroscopy, separations, electrochemistry, sensors...). They teach the class about a scientific area, and the class will discuss this area. Finally, we will attend public scientific lectures of famous scientists.
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 1250 or 1305 or 1327

CHEM 1281 - INSTRUMENTAL ANAL WRITING PRACT

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

CHEM 1310 - SYNTHETIC ORGANIC CHEMISTRY

Minimum Credits: 2
Maximum Credits: 2
This advanced undergraduate course builds onto sophomore organic I and II courses by applying the learned principles to the synthesis of FDA-approved drug molecules. The emphasis of the course will be on analyzing the molecular structures of drugs in a retrosynthetic fashion, followed by developing suitable synthetic routes to these molecules. The reaction mechanisms of key steps of these syntheses will be discussed in detail. Further discussion will include fundamental functional group interconversions, chemoselectivity, and protecting group use, enantioselective synthesis, and organometallic chemistry. Students will learn about the complexities of modern drug molecules, how their structures can be analyzed, and how they are synthesized.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0320 or 0740 or 0232 or CHEM 0208

CHEM 1380 - TECHNIQUES OF ORGANIC RESEARCH

Minimum Credits: 2
Maximum Credits: 2
A course which serves as a guide to the interpretation of ultraviolet, infrared, nuclear magnetic resonance and mass spectra of organic compounds.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0320 or 0740 or 0208 or 0232

CHEM 1410 - PHYSICAL CHEMISTRY 1

Minimum Credits: 3
Maximum Credits: 3
Basic lecture course dealing with quantum theory, atomic and molecular structure, symmetry, spectroscopy and diffraction methods.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [CHEM 0120 or 0720 or 0770 or 0970 or (0112 and 0114)] and (PHYS 0175 or 0111 or 0476) and (MATH 0240 or 0201 or 0241 or CHEM 1000)

CHEM 1420 - PHYSICAL CHEMISTRY 2

Minimum Credits: 3
Maximum Credits: 3
Basic lecture course dealing with gases, kinetic theory, chemical thermodynamics, equilibria, and chemical kinetics.
Academic Career: Undergraduate
Course Component: Lecture
CHEM 1430 - PHYSICAL CHEMISTRY LABORATORY 1

Minimum Credits: 1  
Maximum Credits: 1  
Approximately 8 experiments are performed during the term. Experiments are selected to illustrate important principles of physical chemistry and to make the student familiar with important experimental methods. The course is intended to make the student think critically about reliability of experimental results and to attempt to interpret them in the light of his previous chemical experience.

Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CHEM 1410 or 1302 or 1342

CHEM 1431 - TOPICS IN PHYSICAL CHEMISTRY WRITING PRACTICE

Minimum Credits: 1  
Maximum Credits: 1  
This course provides an opportunity for students to explore a current physical chemistry research topic and create a "journal ready" manuscript. The research topic will be chosen during the first two weeks of classes in consultation with the professor. A comprehensive outline and first draft will be prepared then reviewed with the professor. The paper is revised at least once before final submission and is a minimum of 15 pages. Conferences will be by appointment.

Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis

CHEM 1440 - PHYSICAL CHEMISTRY LABORATORY 2

Minimum Credits: 1  
Maximum Credits: 1  
This course has one four hour lab each week. Approximately 7 experiments are performed during the term, with an emphasis on the macroscopic properties of matter. The course is designed to expand upon the principles and techniques covered in Chem 1430 as well as to introduce the student to other scientific methods for investigating properties of materials. There is a lab fee.

Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (CHEM 1420 and 1430) or 1301 or (CHEM 1341 and 1343) or CHEM 1480

CHEM 1460 - INTRO MODERN COMPUTATIONAL SCIENCES

Minimum Credits: 3  
Maximum Credits: 3  
This course will emphasize the application of microcomputers and numerical methods for solving problems of importance in chemistry. Methods to be studied include solving systems of linear and differential equations, least squares fitting, eigenvalue problems, solution of nonlinear equations.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

CHEM 1480 - INTERMEDIATE PHYSICAL CHEMISTRY

Minimum Credits: 3  
Maximum Credits: 3  
A lecture course emphasizing application of principles of thermodynamics to solutions of electrolytes and non-electrolytes, electrochemical cells,
physical chemistry of surfaces and macromolecules.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (MATH 0240 or 0201 or 0241) and (PHYS 0111 or 0175 or 0476 or 0102 or 0202 or 0152 or 0200) and (CHEM 0120 or 0970 or 0102 or 0112 or 0420)

CHEM 1540 - INTRO TO MASS SPECTROMETRY

Minimum Credits: 3
Maximum Credits: 3
A basic, yet comprehensive, introductory course in mass spectrometry will be offered. The material will include a summary of instrumentation, special interpretation procedures and data handling. The interpretation of spectra of compounds of specific interest in geology and chemistry will be emphasized.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHEM 1600 - SYNTHESIS & CHARCTRZTN POLYMERS

Minimum Credits: 3
Maximum Credits: 3
Synthesis and characterization of polymers is focus of course. Current methods of polymer synthesis will be surveyed, practical implementation of reactions and kinetic consequences of reaction strategies in homopolymer, copolymer and block copolymer synthesis. Techniques for characterization of polymer molecular weight, chemical composition, and stereochemistry (Fi-IR, NMR, other spectroscopic and chemical methods) will be discussed. Brief treatment of polymer solution thermodynamics and selected topics in polymer chemistry will be discussed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CHEM 0320 or 0740 or 0208 or 0232) and (CHEM 1420 or 1480 or 1302 or 1342 )

CHEM 1605 - SYNTH & CHARCTRZTN POLYMERS LAB

Minimum Credits: 1
Maximum Credits: 1
This course is the laboratory component of CHEM 1600. Students will gain practical experience in the synthesis of polymers and the use of modern techniques used in the characterization of the polymers they synthesize.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0320 or 0740 or 0208 or 0232) and (CHEM 1420 or 1480 or 1302 or 1342 )

CHEM 1620 - ATOMS, MOLECULES AND MATERIALS

Minimum Credits: 3
Maximum Credits: 3
This course will use qualitative molecular orbital theory to understand the design and performance of new materials. A link will be made between "small molecule" intuition and the solid-state perspective on large molecules. Clusters and solids.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHEM 1700 - UNDERGRADUATE RESEARCH SEMINAR
Seminar given by faculty on undergraduate research opportunities in chemistry. Open to all students regardless of departmental affiliation, but is designed especially to help those students who may take chemistry 1710 in their selection of a research project.

**CHEM 1701 - UNDERGRAD RES SEMINAR WRIT PRAC**

Minimum Credits: 1  
Maximum Credits: 1  
This course, in conjunction with chemistry 1700, will allow students to write a major research paper based on a seminar given by a departmental faculty member. Extensive library work will be required. At least one revision of the paper will also be expected. This course will fulfill the CAS Departmental Writing requirement.

**CHEM 1710 - UNDERGRADUATE RESEARCH**

Minimum Credits: 1  
Maximum Credits: 6  
This is an elective course where a research project is carried out under the direction of a member of the chemistry faculty. It is for the serious student who wishes to expand his scholarly interests. Approximately four hours research per week per credit; usually no more than three credits per term.

**CHEM 1711 - UNDGR RESEARCH WRITING PRACTICUM**

Minimum Credits: 1  
Maximum Credits: 1  
Chem 1711 will require the student to write a report in the form of a major research paper and will include a historical background to the project, an experimental or methods sections and a discussion of the results and their meaning.

**CHEM 1720 - UNDERGRAD TEACHING EXPERIENCE**

Minimum Credits: 1  
Maximum Credits: 4  
Students can gain teaching experience by serving as instructors in one of the undergraduate chemistry lab courses.

**CHEM 1810 - CHEMICAL BIOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
Revolutionary transformations in chemistry and biology have led to the merging of these disciplines where contributions from both fields impact our
molecular and quantitative understanding of biology. Rapid growth in this area has been driven in part by students and researchers applying synthesis, quantitative analysis, and theoretical reasoning to the study complex cellular processes. This course focuses on enzyme mechanisms in biological pathways, kinetics and thermodynamics, and chemical tools to probe and screen components of the cell. Some other topics include DNA/RNA processing, macromolecular interactions, chemical signaling, posttranslational modifications, chemical syntheses of biomolecules, and development of assays for high throughput drug screening.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0320 and BIOSC 0160

CHEM 1830 - SYNFETIC BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHEM 1902 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 6
Directed study in a specific area of chemistry to enhance preparation for undergraduate research.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

CHIN 0001 - FIRST YEAR CHINESE 1

Minimum Credits: 5
Maximum Credits: 5
This is the first term of first year chin language course intended for those who have no or little experience in this language. This course helps students to develop basic oral and written proficiency and understand the basics of chin language and culture. Students are expected to be able to converse in limited daily life situations and write short paragraphs on personal topics. Class activities will consist of pair work, group work, and presentations on the course materials and other level appropriate authentic materials.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 0002 - FIRST YEAR CHINESE 2

Minimum Credits: 5
Maximum Credits: 5
This is the 2nd term of 1st year chin language course intended for those who have completed chin 1001/0001 or its equivalent. This course continues to help students to develop basic oral and written proficiency and understand the basics of chin language and culture. Students are expected to be able to converse in limited daily life situations and write short paragraphs on personal topics. Class activities consist of pair work, group work, and presentations on the course materials and other level appropriate authentic materials.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHIN 0001 (MIN GRADE 'C-')

CHIN 0003 - SECOND YEAR CHINESE 1
The course aims to enhance student's abilities for speaking accurately and appropriately in increasingly challenging situations, reading and understanding narrative and descriptive texts and the relevant cultural aspects, writing short narrative paragraphs with proper discourse connectors, and conversing on a wider range of personal topics with some sophistication. This course includes recognition and production of 350 characters presented in both traditional and simplified versions. Students should have control of a cumulative total of 1,000 characters by the end of the term.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CHIN 0002 (MIN GRADE 'C-')

**CHIN 0004 - SECOND YEAR CHINESE 2**

Minimum Credits: 5  
Maximum Credits: 5  
The course aims to enhance student's abilities for speaking accurately and appropriately in increasingly challenging situations, reading and understanding a wider range of narrative and descriptive texts and the relevant cultural aspects, writing longer narrative and descriptive paragraphs with proper discourse connectors and idiomatic expressions, and conversing on personal topics with sophistication and some non-personal topics. This course includes recognition and production of 350 characters presented in both traditional and simplified versions. Students should have control of a cumulative total of 1,400 characters by the end of the term.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CHIN 0003 (MIN GRADE 'C-')

**CHIN 0005 - CHINESE FOR HERITAGE SPEAKERS**

Minimum Credits: 5  
Maximum Credits: 5  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CHIN 0007 - INTRODUCTION TO CHINESE CIVILIZATION AND CULTURE**

Minimum Credits: 3  
Maximum Credits: 3  
This course is an interdisciplinary introduction to Chinese society and culture from earliest times to the present. We will introduce the development of China in material terms as well as in terms of competing beliefs, and the relationship of these to social groups. The first part of the course explores ancient literature, philosophy, religion, art, architecture, customs, and other aspects of China's rich and diverse heritage. The second part will be devoted to China's transition to a modern society, covering such topics as social changes, urban life, popular culture, and the values and ideas that captivate contemporary Chinese people's attention. Cultural traditions of Hong Kong, Taiwan, and Tibet will also be employed.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CHIN 0060 - YIN AND YANG: INTRODUCTION TO CHINESE CULTURE**

Minimum Credits: 1  
Maximum Credits: 1  
Focus on theme of continuity and change. Begin with ancient archetypes of yin and yang and conclude with current religious phenomenon of Falun Gong. Sessions conducted by primary instructor and by distinguished experts on such topics as Chinese economy, history, family, politics, medicine, philosophy, religion, literature, and the arts.  
**Academic Career:** Undergraduate
CHIN 0071 - THEMES AND TYPES IN MODERN CHINESE LITERATURE AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 0080 - CITY LIFE AND EAST ASIAN CULTURE

Minimum Credits: 3
Maximum Credits: 3
This is a humanities based modular course designed as an introduction to important areas of East Asian civilization. The student will discover how literature, art and thought has flourished in the urban areas of China and Japan.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 0081 - EAST ASIA IN THE WORLD

Minimum Credits: 3
Maximum Credits: 3
To enhance a greater understanding of East Asian cultures; to explore the interactions and relations between the peoples and cultures of East Asia (China and Japan) and the rest of the world, from ancient times to the present. Literary works, memoirs, autobiographies, diaries, historical records and films will be used. Themes involve such topics as the significance of travel in self-understanding, diaspora, immigration, and changing ideas of the homeland.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 0085 - REVOLUTION, INVOLUTION, AND IDENTITY IN MODERN CHINESE CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course provides an interdisciplinary introduction to Chinese society and culture from the turn of the 20th century to the present. Specifically, it focuses on the notions of revolution, involution, and identity reflected in literary and visual representations. Exploring the dynamic between change and continuity in modern Chinese history, it seeks to examine concepts such as empire, modernity, revolution, and nation, and investigate identity formations in national, ethnic, gender, and individual levels. It will cover such topics as social changes, historical consciousness, urban life, popular culture, and the values and ideas that captivate contemporary people's imagination. Cultural orientations of Hong Kong, Taiwan, and Tibet will also be explored.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 0099 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Student will study under guidance of a department faculty member on a topic not covered by regular coursework.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

**CHIN 1020 - THIRD YEAR CHINESE 1**

- Minimum Credits: 5
- Maximum Credits: 5

The course aims to enhance student's abilities for speaking accurately and appropriately in challenging situations, reading and understanding original texts of different types, writing short essays on various topics with discourse connectors and idiomatic expressions, and conversing on both personal and non-personal topics with sophistication at discourse level. Students in this course should be aware of relevant Chinese traditions and perspectives and be able to make comparisons and connections with other cultures.

Academic Career: Undergraduate

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHIN 0004 (MIN GRADE 'C-')

**CHIN 1021 - THIRD YEAR CHINESE 2**

- Minimum Credits: 5
- Maximum Credits: 5

The course aims to enhance student's abilities for speaking accurately and appropriately in challenging situations, reading and understanding original texts of different types, writing short essays on various topics with discourse connectors and idiomatic expressions, and conversing on both personal and non-personal topics with sophistication at discourse level. Students in this course should be aware of relevant Chinese traditions and perspectives and be able to make comparisons and connections with other cultures.

Academic Career: Undergraduate

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHIN 1020 (MIN GRADE 'C-')

**CHIN 1025 - ASPECTS OF THE CHINESE LANGUAGE**

- Minimum Credits: 3
- Maximum Credits: 3

Aspects of the Chinese language will offer a linguistic introduction to Chinese. No prior knowledge of linguistics is assumed although familiarity with linguistic analysis is a plus. The Chinese language is substantially different from English or other Indo-European languages. It is also distinct from some other East Asian languages. For instance, it has a logographic writing system and is a tonal language. Its word order is more flexible than English and is a topic-prominent language. It does not have rich grammatical inflections but has a limited number of aspectual markers. The course serves the following purposes: (1) introduce the basic facts of the Chinese language including its development, the phonology, morphology, the semantic and syntactic aspects of Mandarin Chinese, and the interactions of the language with Chinese culture and the society; (2) introduce elementary linguistic concepts relevant to chinese to enable students to use the right tool to describe and critically analyze the features of a language; (3) encourage students to reflect on their language learning experience or knowledge of other languages to conduct reasoning, such as analyzing the sources of difficulty in their studying of chinese; (4) to inspire interest in a range of topics including differences in modern and classical chinese, philosophical belief embodied in the language, chinese culture manifested in the language (such as the notion of politeness, face, etc.), and to lay a foundation for further studies in linguistics as well as in those relevant topics.

Academic Career: Undergraduate

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHIN 1020 (MIN GRADE 'B-')

**CHIN 1027 - TOPICS ON CHINESE AS A SECOND LANGUAGE**

- Minimum Credits: 3
- Maximum Credits: 3

Academic Career: Undergraduate
CHIN 1033 - SPECIAL TOPICS: ADVANCED SPEAKING:

Minimum Credits: 3  
Maximum Credits: 3  
To develop greater fluency, accuracy and confidence in spoken Chinese. Rhetorical and presentational skills will be introduced and reinforced. Students will narrate and describe an event/situation, maintain sustained discourses, provide structured arguments, develop hypotheses and explain as well as defend opinions. Through reading news articles on various subjects such as society, finance, politics, technology, sports and entertainment, students will gain deeper understanding of social, cultural, political and economic situations in Chinese speaking regions and will be able to conduct in-depth conversations with native speakers.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: CHIN 1020 (MIN GRADE 'C-')

CHIN 1040 - LITERARY CHINESE 1 CLASSICAL

Minimum Credits: 3  
Maximum Credits: 3  
This is a course in classical Chinese whose purpose is to acquaint the student with the language and syntax of classical Chinese.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: CREQ: CHIN 1020

CHIN 1041 - LITERARY CHINESE 2 CLASSICAL

Minimum Credits: 3  
Maximum Credits: 3  
A continuation of Chinese 1040, this course will further develop the student's knowledge of vocabulary and syntactical patterns of classical Chinese.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CHIN 1040

CHIN 1047 - CHINESE AND WESTERN POETRY

Minimum Credits: 3  
Maximum Credits: 3  
A comparative study of Chinese and Western lyric poetry. This course explores the world of feeling as expressed in the poetry of two vastly different worlds; china and the West and focuses on the language of feeling in a poetic medium. The purpose of this course is to appreciate how differences between the two poetic traditions is essential to a better understanding of the two cultures.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

CHIN 1050 - FOURTH YEAR CHINESE 1

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced language course which concentrates on reading current journalistic writings such as news reports, periodicals, articles and editorials.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHIN 1021 (MIN GRADE 'C-')

CHIN 1051 - FOURTH YEAR CHINESE 2

Minimum Credits: 3
Maximum Credits: 3
The second term of fourth year reading this course continues the student's advanced language study concentrating on reading journalistic writings.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHIN 1050 (MIN GRADE 'C-')

CHIN 1059 - ADAPTED FOR THE SCREEN: CHINESE LITERATURE AND FILM

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CHIN 1083 - MASTERPIECES OF CHINESE LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course is devoted to the study of Chinese literature from ancient times to the end of the 19th century. Lectures and readings include prose (historical, philosophical and literary texts, legends and myths of the remote past, anecdotes, short stories and fantastic tales of ghosts and love) and poetry (from the book of songs to the poetry of the t'ang and sung periods).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 1084 - MASTERPIECES OF CHINESE LITERATURE: MODERN

Minimum Credits: 3
Maximum Credits: 3
A critical analysis of some of the most representative literary works in modern china from a literary and socio-political perspective. Film is used as a means of enhancing the student's appreciation of the works under consideration.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 1085 - INTRODUCTION TO EAST ASIAN CINEMA

Minimum Credits: 3
Maximum Credits: 3
This course investigates the ways in which film addresses and treats the major socio-cultural issues in modern society through a critical study of the works of Chinese and Japanese master filmmakers. The course focuses on changes in marriage and family patterns, women's roles and the plight of youth.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
CHIN 1087 - INTRODUCTION TO CHINESE NARRATIVE

Minimum Credits: 3
Maximum Credits: 3
The student is introduced to the major forms and important periods of Chinese narrative by reading and discussing a variety of Chinese narratives from the beginning of Chinese literature to the modern period. Texts include philosophical fables, historical records, mythical tales, stories of the supernatural, vernacular stories and novels.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 1088 - NEW CHINESE CINEMA

Minimum Credits: 3
Maximum Credits: 3
Students will study Chinese films made by filmmakers of mainland China and Taiwan. They will learn about origins, development, themes, and styles with major directors and important films of new Chinese cinema being studied. Students will have an opportunity to understand contemporary Chinese culture and society.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 1089 - THE WORLD OF CHINA

Minimum Credits: 3
Maximum Credits: 3
This course will survey the wax and wane of pop culture through disparate phases of social and political developments of modern China. The readings will introduce students to works of literature, art, and film to see how tradition and modernity, elite and mass cultures, East and West conflict and converge; how China absorbs, adapts as well as resists capitalistic modernity while embracing global market economy; how China grapples with urban alienation, social flux, moral laxity and other negative aspects of industrialization and urbanization. The course will make available to students a host of art images, dvd clips and e-texts to enhance and expand their perception of modern China.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 1090 - GREAT MINDS OF CHINA

Minimum Credits: 3
Maximum Credits: 3
First segment on Confucianism, including the Analects and Mencius, will be studied with relevant commentaries, stressing implications for Chinese culture, especially in ethical and socio-political dimensions. Second segment on Taoism, Lao Tzu and Chuang Tzu, will be studied with emphasis on impact on the arts and literature. Final segment on Buddhism will concentrate on representative sutras of the tradition, diamond sutra and texts from the Chan (Zen) master's.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CHIN 1700 - TRANSLATION THEORY AND PRACTICE

Minimum Credits: 3
Maximum Credits: 3
This course is intended for speakers of English who possess advanced Chinese proficiency. It is an overview of theory and practice of translation from Chinese to English, including the training on hands-on translation practices. Students will use real-life translation materials such as news articles, legal documents, commercial flyers, financial reports, and technical manuals to simulate a professional translation process. Basic techniques
and strategies that are practiced commonly in the translation field will be introduced and further reinforced through lectures, and research and analysis of Chinese-English bilingual websites.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CHIN 1021 (MIN GRADE 'B-')

**CHIN 1800 - SPECIAL TOPICS**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CHIN 1901 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 6  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**CHIN 1906 - CHINESE INTERNSHIP**

Minimum Credits: 1  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** LG/SNC Elective Basis

**CHIN 1908 - DIRECTED WRITING FOR MAJORS**

Minimum Credits: 1  
Maximum Credits: 1  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CHIN 1999 - SENIOR PROJECT**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade
CEE 0085 - SOPHOMORE SEMINAR

Minimum Credits: 0
Maximum Credits: 0
Required of all new students in their first year after transferring into the civil and environmental engineering department from freshman engineering or other colleges, the sophomore seminar acquaints the students with the departmental programs in the various civil engineering sub-disciplines. It is conducted on weeks alternating with the departmental seminar.

Academic Career: Undergraduate
Course Component: Colloquium
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

CEE 0109 - COMPUTER METH IN CIVIL ENGRG 1

Minimum Credits: 3
Maximum Credits: 3
This course emphasizes the mathematics and problem-solving skills necessary to be an intelligent user of a variety of computational tools for engineering analysis. The first portion of the course focuses on linear algebra within the context of engineering problems. Concepts of numerical linear algebra are then introduced, followed by a brief introduction to additional discrete analysis tools such as numerical approximation and signal processing. Lastly, through the introduction of cad software and an individual term project, students are taught how to independently gain familiarity and confidence in engineering software.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: (ENGR 0012 or 0712 or 0715 or 0718 or 0016 or ET 0023) and MATH 0240 or 0201 or 0241; PROG: Swanson School of Engineering

CEE 1085 - DEPARTMENTAL SEMINAR

Minimum Credits: 0
Maximum Credits: 0
The departmental seminars are designed to acquaint the student with aspects of the civil engineering profession which are not normally encountered in classes and school activities.

Academic Career: Undergraduate
Course Component: Colloquium
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

CEE 1105 - MATERIALS OF CONSTRUCTION

Minimum Credits: 3
Maximum Credits: 3
The nature, physical properties, including environmental aspects of civil engineering construction materials are discussed. Experimentation, where applicable, is utilized.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: ENGR 0141 or 0145 or ET 0051 or 0052; PROG: Swanson School of Engineering

CEE 1200 - CONSTRUCTION MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
This course introduces undergraduates to the construction management processes including planning, financing, contract administration, and project
scheduling and controlling. It is a practical course that provides a broad knowledge of managerial decision-making for young engineers. This is the basic course for all follow-on construction courses.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PROG: Swanson School of Engineering

**CEE 1202 - CONSTRUCTION SCHEDULING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course teaches the student the theory and practice of planning, scheduling, and controlling the time and cost of construction projects. The course covers various advanced techniques such as cost duration analysis, critical resource analysis, stochastic modeling, and cost control. The course teaches the use of contemporary computerized software systems with hands-on application.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CEE 1200; PROG: Swanson School of Engineering

**CEE 1203 - CONSTRUCT PROFSSN DEVELOPMENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course teaches the student how construction-related organizations (owner, designer, contractor) are organized and managed. The course covers such topics as marketing, TGM, ethics, risk management, and personnel management. The course emphasizes a professional perspective to the practice of construction management and incorporates lectures by practitioners of various professions.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CEE 1200 or CET 1152; PROG: Swanson School of Engineering

**CEE 1204 - CONSTRUCTION LAW AND RISK MANAGEMENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course introduces the student to the legal and risk management issues in construction. The course covers the principles of contract law and various legal areas affecting construction such as environmental regulations, insurance, bonds, tort liability, dispute resolution, and professional services.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CEE 1200; PROG: Swanson School of Engineering

**CEE 1205 - CONSTRUCTION FINANCE & COST CONTROL**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course introduces the student to the company level financial and accounting systems which are used in the construction industry, and to project control systems which are used to manage cost and time. The course includes such topics as financial accounting, cost accounting, financial statements, and variance analysis.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering
CEE 1206 - CONSTRUCTION & COST OF ELECTRICAL SUPPLY

Minimum Credits: 3
Maximum Credits: 3
This course teaches basic construction and cost estimating methodologies for single and three-phase electrical distribution systems that include wiring, power, and controls. The course uses commercial estimating systems and the national electrical code.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

CEE 1207 - CONSTRUCTION AND COST OF MECHANICAL SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
This course teaches the student how to plan, organize, and execute mechanical construction operations; and the methodologies for estimating their costs. The course covers mechanical systems such as water (supply and waste), HVAC, fire protection, and their controls.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

CEE 1209 - LIFE CYCLE ASSESSMENT METHODS AND TOOLS

Minimum Credits: 3
Maximum Credits: 3
This class will introduce students to life cycle thinking and provide engineers with tools to assess the sustainability and environmental impact of a product, process, or activity. Life cycle assessment (LCA) principles, methods, tools, and challenges will be explored throughout the course. Topics include material and energy flow analysis, environmental indicators and metrics for sustainability, case studies of LCA applications, and impact assessment.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0220 or 0140 or 0221; PROG: School of Engineering

CEE 1210 - ENGR AND SUSTAINABLE DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
This course is intended as an introductory interdisciplinary engineering course. Topics include principles of sustainable design in engineering, manufacturing, infrastructure, communications, and community development; overview of environmental issues for engineers; design for the environment; models of environmental processes; introduction to the use of life cycle assessment; and case studies examining the relationship of green design and the field of engineering.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: Swanson School of Engineering

CEE 1217 - GREEN BUILDING DESIGN AND CONSTRUCTION

Minimum Credits: 3
Maximum Credits: 3
Understanding the design and construction of green buildings are key elements in green and sustainable engineering. This course teaches all of the major aspects of green building design and construction, including sustainable sites, water efficiency, energy and atmosphere, materials and
resources, indoor environmental quality, innovation, and design process. The United States green building council's leadership in energy and environmental design green building rating system is used to demonstrate one possible green building rating system. Life cycle thinking will be discussed to expand the focus from not only design and construction, but also use, operations, and decommissioning.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

CEE 1218 - DESIGN FOR THE ENVIRONMENT

Minimum Credits: 3
Maximum Credits: 3

DESIGN FOR THE ENVIRONMENT (DFE) IS A SPECIFIC SET OF DESIGN PRACTICES AIMED AT CREATING ECO-EFFICIENT PRODUCTS AND PROCESSES. INCORPORATING SUSTAINABILITY INTO PRODUCT AND PROCESS DESIGN AS A DESIGN CONSTRAINT IS CLEARLY A NECESSITY, AS ALL ENGINEERS MUST UNDERSTAND THE LIMITS ON NATURAL RESOURCES. STUDENTS WILL BE INTRODUCED TO THE DFE TOOLBOX WHICH INCLUDES DESIGN FOR DEMANUFACTURE, LIFE CYCLE ASSESSMENT, AND ECOFRIENDLY MATERIALS SELECTION. STUDENTS WILL ALSO BE EXPOSED TO REAL WORLD INDUSTRY SUSTAINABILITY CHALLENGES AND HANDS ON LAB EXPERIENCES DESIGNED IN CONJUNCTION WITH LOCAL INDUSTRY AND ORGANIZATION PARTNERS. THE COURSE IS ALSO INTENDED TO BE INTER-DISCIPLINARY BETWEEN ENGINEERING AND BUSINESS STUDENTS TO FOSTER A BALANCE BETWEEN SUSTAINABILITY DESIGN EFFORTS AND BUSINESS PLANS AND STRATEGIES. STUDENTS CAN EXPECT THAT LABS WILL CONSIST OF A MIX OF FIELD TRIPS TO PARTNER COMPANIES AND LABS AT THE UNIVERSITY. A MAJOR ASPECT TO THE COURSE WILL INVOLVE STUDENT PARTNERSHIPS WITH LOCAL COMPANIES; STUDENTS WILL BE CHALLENGED TO APPLY THEIR DFE SKILLS TO PROJECTS THAT ADDRESS SUSTAINABILITY CHALLENGES. ADDITIONALLY, STUDENTS WILL HAVE THE OPPORTUNITY TO PARTICIPATE IN A SUMMER RESIDENCY TO IMPLEMENT THEIR PROJECT WITH THEIR SPONSOR COMPANY AT THE END OF THE COURSE.

Academic Career: UGRD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

CEE 1220 - ENERGY TECHNOLOGIES AND THE ENVIRONMENT

Minimum Credits: 3
Maximum Credits: 3

This course covers the basic principles and concepts underlying energy production, use, and environmental impacts with a focus on selected traditional fossil fuel based technologies and low carbon advanced energy technologies. Topics covered include world's energy resources, principles and processes behind natural resource extraction, energy generation technologies, laws of thermodynamics, current and anticipated world energy use, resource constraints, and environmental sustainability issues of present and future energy technologies. Special emphasis is placed on the life cycle environmental impacts of different energy technologies and challenges and opportunities for sustainable development of emerging energy technologies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

CEE 1221 - CONSTRUCTION COST ENGINEERING

Minimum Credits: 3
Maximum Credits: 3

This course teaches the methodology for estimating construction costs. The course covers all types of costs and all types of construction. The student is introduced to standard reference materials and to computerized estimating systems. The course teaches methods and procedures for developing accurate estimates and the basis for follow-on cost control.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CEE 1200; PROG: Swanson School of Engineering

CEE 1230 - BUILDING INFORMATION MODELING

Minimum Credits: 3
Maximum Credits: 3
The goal of this course is to introduce the students to building information modeling (BIM) and other new and evolving technologies which are revolutionizing the building and horizontal infrastructure construction industry. Students will learn how BIM and other innovative technologies are being adopted currently by progressive builders to streamline the construction process through enhanced coordination, visualization, logistical planning, cost estimation and analysis. They will also learn how these new tools are enabling (and in some instances requiring) new highly integrated processes that are redefining architecture, engineering, construction and operations (AECO) business relationships and delivery contracts.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CEE 1200; PROG: Swanson School of Engineering

CEE 1233 - CONSTRUCTION DESIGN PROJECT

Minimum Credits: 3
Maximum Credits: 3
Consists of comprehensive projects with emphasis on the nature of engineering problem solving and creative aspects of design in managerial decision-making of construction in such areas as estimating, scheduling, methods, risk management, and finance.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CEE 1200 or CET 1152; PROG: Swanson School of Engineering

CEE 1330 - INTRODUCTION TO STRUCTURAL ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
An introduction to linear analysis of statistically determinate, and indeterminate, elastic structural systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (MATH 0250 or 0290 or 0202 or 1035) and (ENGR 0141 or 0145 or ET 0053); PROG: Swanson School of Engineering

CEE 1333 - STRUCTURAL DESIGN PROJECT

Minimum Credits: 3
Maximum Credits: 3
Comprehensive (capstone) structural design project for a building or a bridge, emphasizing conceptual design, design of footings and superstructure, and preparation of cad drawings, a final written and a final oral report.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (CEE 1340 or 1341) or (CET 1111 or 1112) and (ENGR 0151); PROG: Swanson School of Engineering

CEE 1340 - CONCRETE STRUCTURES 1

Minimum Credits: 3
Maximum Credits: 3
An introductory concrete design course based on the ACI 318 code. Fundamental topics relating to behavior, strength and design of reinforced concrete beams, one-way slabs, short columns, and footings are presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (CEE 1105 or CET 1151) and (CEE 1330 or CET 1111); PROG: Swanson School of Engineering

**CEE 1341 - STEEL STRUCTURES 1**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
An introductory steel design course based on the load and resistance factor design philosophy. Fundamental topics related behavior, strength and design of tension members, columns, beams, beam-column and simple connections are treated.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (CEE 1105 or CET 1151) and (CEE 1330 or CET 1111); PROG: Swanson School of Engineering

**CEE 1370 - INTRODUCTION TO NONDESTRUCTIVE EVALUATION AND STRUCTURAL HEALTH MONITORING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course aims at providing an overview of the different techniques for the nondestructive evaluation (NDE) and the structural health monitoring (SHM) of civil and aerospace structures. Techniques such as electrical resistance strain gauges, fiber optic sensing and ultrasonics will be described within the framework of the NDE. Applications to materials characterization and defect detection will be discussed with emphasis on steel and composite structures. Global and local methods for SHM will be introduced with emphasis on vibration and ultrasonic methods, respectively. The course will also provide the essential tools necessary for the digital signal processing of ultrasonic data. Matlab and laboratory exercises on recent researches will be investigated.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (CEE 1105 or CET 1151) and (CEE 1330 or CET 1111); PROG: Swanson School of Engineering

**CEE 1401 - OPEN CHANNEL HYDRAULICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Basic theories and principles of open channel flows (including flows in rivers and streams). Methods of calculating uniform flow, gradually varied flow, rapidly varied flow, and unsteady flow. Design of open channels.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CEE 1402 and 1412; PROG: Swanson School of Engineering

**CEE 1402 - FLUID MECHANICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
A first course in fluid mechanics discussing basic principles and methods for studying static and dynamic behaviors of fluids. In the laboratory the students conduct experiments on fluid flow in pipes and open channels.

**Academic Career:** Undergraduate  
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGR 0141 and MATH 0240; LVL: Jr or Sr; PROG: Swanson School of Engineering (UENGR)

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**CEE 1410 - WATER RESOURCES ENGINEERING**

Minimum Credits: 3  
Maximum Credits: 3  
This course addresses fundamental and practical issues of water resources engineering. The increasing demand for sufficient water quantity and quality that is distributed in time and space forces engineers and policy makers to develop more comprehensive, complex, and ambitious plans for environmental and water systems. This course emphasizes understanding, formulating, and approaches of solving problems of water resources engineering. Quantitative overview of the water resources development, water resources problems, impacts of climate variability and global warming on water resources, and the fundamental principles and basic tools to solve these problems will be covered. Topics to be discussed also include introduction to basic concepts of hydrology, GIS (geographic information systems) applications, theory of unit hydrograph, frequency analysis, flood routing through reservoirs and rivers, introduction to rainfall-runoff analyses, and watershed modeling.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (CEE 1402 and 1412) or (CET 1140); PROG: School of Engineering

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**CEE 1412 - INTRODUCTION TO HYDROLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
Hydrologic cycle, precipitation, infiltration, evaporation, runoff, flood routing, groundwater hydrology, well hydraulics, statistical analysis of hydrologic data, reservoirs, dams, and hydraulic structures.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (CEE 1102 or 1105 or ENGR 0020 or MATH 1153) and (CEE 1402 or CET 1140); PROG: Swanson School of Engineering

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**CEE 1433 - WATER RESOURCES DESIGN PROJECT**

Minimum Credits: 3  
Maximum Credits: 3  
Consists of comprehensive projects with emphasis on the nature of engineering problem solving and the creative aspects of design.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: CEE 1401 or 1410 or 2400 or 2401 or 2405 or 2410; PROG: Swanson School of Engineering

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**CEE 1503 - INTRO TO ENVIRONMENTAL ENGRNG**

Minimum Credits: 3  
Maximum Credits: 3  
Fundamentals of environmental science and engineering as applied to water and wastewater treatment, air quality control, and solid and hazardous waste management.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: CHEM 0102 or 0112 or 0120 or 0420 or 0720 or 0770 or 0970; PROG: Swanson School of Engineering

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**CEE 1504 - CHEMISTRY IN ENVIRONMENTAL ENGINEERING**
This course will build on fundamentals introduced in CHEM 0960/0970 (chemistry for engineers), applying chemical concepts in the context of environmental science and engineering. Topics covered include chemical kinetics, thermodynamics, and equilibria, organic chemistry, and biochemistry. These concepts will be explored within the primary environmental media, water, soil and air. Students will be expected to work independently and in groups to tackle problem sets, in-class problems, and a class term project. Further, this course serves as a bridge to advanced courses in the environmental engineering curriculum where the concepts introduced will be further applied to understanding important environmental phenomena in CEE 1520 (mass and energy balances in environmental engineering) and CEE 1522 (fate and transport in environmental engineering), and techniques used to analyze environmental samples in CEE 1523 (environmental engineering laboratory).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CEE 1505 - WATER TREATMENT AND DISTRIBUTION SYSTEM DESIGN

Minimum Credits: 3
Maximum Credits: 3
Stepwise development and process design, equipment selection, economic evaluation, layout, and operating guidelines for water treatment, storage and distribution systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CEE 1503 and 1402) or CET 1141; PROG: School of Engineering

CEE 1511 - ENVIRONMENTAL ENGINEERING PROCESS LABORATORY

Minimum Credits: 3
Maximum Credits: 3
Chemical and biological laboratory procedures and techniques for instrumental analysis applied to evaluation of liquids and gases for environmental assessment and operation and control of environmental quality control systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CEE 1503; PROG: Swanson School of Engineering

CEE 1513 - ENVIRONMENTAL ENGRNG PROCESSES

Minimum Credits: 3
Maximum Credits: 3
Introduction to basic design concepts applied to water and wastewater treatment, air quality control, and solid and hazardous waste management.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CEE 1503 or CET 1141; PROG: Swanson School of Engineering

CEE 1514 - ENVIRONMENTAL IMPACT ASSESSMENT

Minimum Credits: 3
Maximum Credits: 3
Technical and procedural aspects of environmental impact analysis and assessment with emphasis on regulatory framework, characterization of impacts and their remediation, and the decision process when applied to engineering systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CEE 1503 or CET 1141; PROG: School of Engineering

CEE 1515 - WASTEWATER COLLECTION AND TREATMENT PLANT DESIGN

Minimum Credits: 3
Maximum Credits: 3
Stepwise development and process design, equipment selection, economic evaluation, layout, and operating guidelines for wastewater collection and treatment systems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CEE 1503 and 1402) or CET 1141; PROG: School of Engineering

CEE 1520 - MATERIAL AND ENERGY BALANCES IN ENVIRONMENTAL ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Introduces students to engineering calculations involving material and energy balances around environmental and chemical processes.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Civil & Environmental Engineering; PREQ: CEE 1503 and MATH 0240 and CHEM 0970

CEE 1522 - FATE AND TRANSPORT IN ENVIRONMENTAL ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
An introduction to the thermodynamic and kinetic drivers of chemical fate in the environment. Processes governing the diffusion, advection and transformation of chemicals in air, water and soil. Inter-media exchange, environmental degradation and uptake into biotic systems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CEE 1503; PROG: Swanson School of Engineering

CEE 1523 - ENVIRONMENTAL ENGINEERING LAB

Minimum Credits: 3
Maximum Credits: 3
Chemical and biological laboratory procedures for environmental assessment and operation and control of environmental quality control systems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CEE 1503 or CET 1141; PROG: Swanson School of Engineering

CEE 1533 - ENVRL ENGR DESIGN PROJECT

Minimum Credits: 3
Maximum Credits: 3
Group design of an engineered system for environmental quality control.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CEE 1505 or 1507 or 1513 or 1515 or (CET 1141 and 1142); PROG: School of Engineering
CEE 1609 - LIFE CYCLE ASSESSMENT METHODS AND TOOLS

Minimum Credits: 3
Maximum Credits: 3
This class will introduce students to life cycle thinking and provide engineers with tools to assess the sustainability and environmental impact of a product, process, or activity. Life cycle assessment (LCA) principles, methods, tools, and challenges will be explored throughout the course. Topics include material and energy flow analysis, environmental indicators and metrics for sustainability, case studies of LCA applications, and impact assessment.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0140 or 0220 or 0221; PROG: Swanson School of Engineering

CEE 1610 - ENGINEERING AND SUSTAINABLE DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
This course is intended as an introductory interdisciplinary engineering course. Topics include principles of sustainable design in engineering, manufacturing, infrastructure, communications, and community development; overview of environmental issues for engineers; design for the environment; models of environmental processes; introduction to the use of life cycle assessment; and case studies examining the relationship of green design and the field of engineering.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CEE 1617 - GREEN BUILDING DESIGN AND ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Understanding the design and construction of green buildings are key elements in green and sustainable engineering. This course teaches all of the major aspects of green building design and construction, including sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation, and design process. The united states green building council's leadership in energy and environmental design green building rating system is used to demonstrate one possible green building rating system. Life cycle thinking will be discussed to expand the focus from not only design and construction, but also use, operations, and decommissioning.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CEE 1618 - DESIGN FOR THE ENVIRONMENT

Minimum Credits: 3
Maximum Credits: 3
Global population growth, resource scarcity, a changing climate, and an increasingly stressed water supply are significant environmental challenges we face today. The prominence of these challenges has led to increased awareness and demand for more sustainable approaches to engineering design and policy strategies. These topics will be discussed in design for the environment and will serve as motivation for the development of innovative design solutions to 'real-world' sustainability challenges. The course will begin with an introduction to sustainability, design frameworks, the design process and the role of innovation, followed by systems thinking, metrics to quantify and evaluate the sustainability of alternatives, and assessing toxicity and risk. The second half of the course will introduce students to designing appropriate technologies within the context of the developing world as well as a series of relevant case studies (e.g., energy, water, agriculture, nanotechnology). Design will be incorporated throughout the course as a way for students to apply what they learn in class to the development of an innovative solution to a sustainability challenge. The course integrates active learning components that provide students the opportunity to exercise the engineering design process, work effectively in a group, and practice written and oral presentation skills.

Academic Career: Undergraduate
Course Component: Lecture
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

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**CEE 1700 - TRAFFIC MANAGEMENT AND OPERATIONS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Introduction to traffic flow theory and characteristics. Highway capacity analysis. Basic traffic management and control.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

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**CEE 1703 - TRANSPORTATION ENGINEERING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Introduction to the design, planning, operation, management, and maintenance of transportation systems. Transportation planning inter-modal transportation systems (highway, air, rails, etc.). Transportation planning of highways, airports, and railroads with traffic flow models, capacity analysis, and safety. Concepts for designing facilities and systems area study with life cycle costing procedures and criteria for optimization.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** MATH 0240 or 0201 or 0241; PROG: Swanson School of Engineering

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**CEE 1710 - TRAFFIC CONTROL SYSTEMS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
A range of traffic control systems including the analysis and design of traffic signals are discussed along with traffic signal systems. Other topics covered include data collection for traffic control systems, optimization software and models; traffic signal hardware design; traffic signal systems selection (adaptive traffic signal systems versus traditional systems) and design and implementation. Pre-requisite CEE 1703 for 1710 and CEE 2700 for 2710  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

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**CEE 1711 - ADVANCED TRANSPORTATION MANAGEMENT STRATEGIES**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is a management-oriented course that covers key aspects of how government transportation agencies operate their transportation systems. Focus is on the strategies that are used to improve public safety and mobility, including traffic incident management, traffic management, traveler information and pricing. Emphasis is also placed on processes, including planning, performance management and systems engineering, that agencies apply in advancing programs and projects. The course concludes with a look at the future, including the effects that automated vehicles and Smart City concepts will have on the future of transportation.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

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**CEE 1714 - PAVEMENT DESIGN AND ANALYSIS**


Minimum Credits: 3  
Maximum Credits: 3  
Concepts and principles in the structural design of pavements for highways and airfields including: traffic loads, climatic factors, soil and material characterization. Application of current pavement design practices and procedures. Economic evaluation of highway and airport pavements.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CEE 1105 and 1811; PROG: Swanson School of Engineering

CEE 1715 - PAVEMENT MAINTENANCE AND REHAB

Minimum Credits: 3  
Maximum Credits: 3  
Engineering concepts and information needed to maintain and rehabilitate pavements. Project evaluation, testing and analysis. Design of rigid and flexible overlays, and other methods of rehabilitation. Selection of rehabilitation alternatives. Analysis of the effects of maintenance activities on pavement performance. Initial and life cycle cost analysis of various rehabilitation alternatives.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CEE 1105 or CET 1151; PROG: Swanson School of Engineering

CEE 1717 - COMPONENTS, PROPERTIES AND DESIGN OF PORTLAND CEMENT CONCRETE

Minimum Credits: 3  
Maximum Credits: 3  
Examines the influence of constituent materials (cements, aggregates and admixtures) on the properties of fresh and hardened concrete, mix design handling and placement of concrete; and behavior of concrete under various types of loading and environment; test methods, designing concrete mixes for specific applications.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: CEE 1105 or CET 1151; PROG: Swanson School of Engineering

CEE 1718 - ADVANCED CONSTRUCTION AND BITUMINOUS MATERIALS

Minimum Credits: 3  
Maximum Credits: 3  
Advanced construction and bituminous materials soils, soil stabilization, aggregates, bituminous materials and mixtures. Advanced topics in selection and design of bituminous materials. Asphalt cement, rheology, emulsions, chip seals, hot-mix asphalt design, visco-elasticity characterization  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CEE 1105 or CET 1151; PROG: School of Engineering

CEE 1720 - URBAN TRANSPORTATION PLANNING

Minimum Credits: 3  
Maximum Credits: 3  
All aspects of the transportation planning process including transportation planning and decision making, transportation modeling, demand and supply analysis, transportation studies, environmental issues and project implementation.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CEE 1703; PROG: Swanson School of Engineering
CEE 1725 - PUBLIC TRANSPORTATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
This course is designed to give seniors and graduate students a basic background in the planning, operations and development of public transportation systems within the context of the overall transportation system.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CEE 1703; PROG: Swanson School of Engineering

CEE 1730 - HIGHWAY ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Highway administration, classification, planning and programming. Geometric design of highways. Traffic characteristics and capacity analyses. Traffic operations and control. Highway design project.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CEE 1703; PROG: Swanson School of Engineering

CEE 1733 - TRANSPORTATION DESIGN PROJECT

Minimum Credits: 3
Maximum Credits: 3
Consists of comprehensive projects with emphasis on the nature of engineering problem solving and the creative aspects of design.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CEE 2700; PROG: Swanson School of Engineering

CEE 1750 - PROJECT DEVELOPMENT AND IMPLEMENTATION

Minimum Credits: 3
Maximum Credits: 3
Project development and implementation - 3 credits: this course provides overview of the process used in project programming and planning, design, construction and operation. The course will emphasize the process used for implementation of major projects with emphasis on construction management and how that task interfaces with other aspects of project development. Students will be involved in a team effort to conceptualize the project, plan alternatives, determine the environmental impact, examine design alternatives, prepare the project for construction documents, recommend award of the contract, manage the contract during construction and determine operational needs of the project.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CEE 1703; PROG: Swanson School of Engineering

CEE 1800 - ENGINEERING GEOLOGY

Minimum Credits: 3
Maximum Credits: 3
Review of basic geologic principles with emphasis on the importance and influence of geology and geologic processes on engineering projects such as dam sites, foundations, tunnels, mine subsidence, landslides, highways, groundwater problems, and seismic studies.
Academic Career: Undergraduate
Course Component: Lecture
CEE 1809 - HYDRAULIC FRACTURING MECHANICS

Minimum Credits: 3
Maximum Credits: 3
This class will prepare students to wisely and critically design hydraulic fracturing treatments as well as make informed recommendations to employers, governments, and communities about the risks and benefits of hydraulic fracturing methods. Upon completion of this course, students will be equipped to use engineering formulae to estimate hydraulic fracture dimensions, evaluate strengths and weaknesses of various modeling approaches, characterize subsurface conditions from wellbore pressure analysis, make sound recommendations for monitoring, and compare and contrast approaches and risks for a range of application domains.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CEE 1330 and 1402; PROG: Swanson School of Engineering

CEE 1811 - PRINCIPLES OF SOIL MECHANICS

Minimum Credits: 3
Maximum Credits: 3
Basic soil properties, permeability, capillarity and frost action, compaction, stresses in soil masses, two-dimensional seepage, compressibility, stress-strain-time behavior, and shear strength.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGR 0141 or 0145 or ET 0053; PROG: Swanson School of Engineering

CEE 1821 - FOUNDATION ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Application of the principles of soil mechanics to the analysis and design of foundations, the stability of slopes and retaining structures.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CEE 1811 or CET 1131) and CEE 1330; PROG: School of Engineering

CEE 1833 - GEOTECHNICAL DESIGN PROJECT

Minimum Credits: 3
Maximum Credits: 3
Consists of comprehensive projects with emphasis on the nature of engineering problem solving and the creative aspects of design.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CEE 1714 or 1715 or 1821 or 2814 or CET 1124 or 1131; PROG: Swanson School of Engineering

CEE 1996 - SPECIAL PROJECTS

Minimum Credits: 1
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

CEE 2201 - CONSTRUCTION COST ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
This course teaches the methodology for estimating construction costs. The course covers all types of costs and all types of construction. The student is introduced to standard reference materials and to computerized estimating systems. The course teaches methods and procedures for developing accurate estimates and the basis for follow-on cost control.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2202 - CONSTRUCTION SCHEDULING

Minimum Credits: 3
Maximum Credits: 3
This course teaches the student the theory and practice of planning, scheduling, and controlling the time and cost of construction projects. The course covers various advanced techniques such as cost duration analysis, critical resource analysis, stochastic modeling, and cost control. The course teaches the use of contemporary computerized software systems with hands-on application.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2203 - CONSTRCT METHODS AND EQUIPMENT

Minimum Credits: 3
Maximum Credits: 3
This course teaches the student how to plan, organize, and execute construction operations. The course includes typical operations in both building construction and engineering construction. The course describes how to properly construct in order to achieve quality and productivity objectives.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2204 - CONSTRUCTION LAW AND RISK MGMNT

Minimum Credits: 3
Maximum Credits: 3
This course introduces the student to the legal and risk management issues in construction. The course covers the principles of contract law and various legal areas affecting construction such as environmental regulations, insurance, bonds, tort liability, dispute resolution, and professional services.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2205 - CONSTRCT FINANCE & COST CONTROL

Minimum Credits: 3
Maximum Credits: 3
This course introduces the student to the company level financial and accounting systems which are used in the construction industry, and to project control systems which are used to manage cost and time. The course includes such topics as financial accounting, cost accounting, financial statements, and variance analysis.

**Academic Career:** Graduate  
**Course Component:** Lecture  
**Grade Component:** Grad LG/SNC Basis  
**Course Requirements:** PROG: Graduate School of Engineering

### CEE 2206 - CONSTRCT & COST OF ELEC SUPPLY

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course teaches basic construction and cost estimating methodologies for single and three-phase electrical distribution systems that include wiring, power, and controls. The course uses commercial estimating systems and the national electrical code.

**Academic Career:** Graduate  
**Course Component:** Lecture  
**Grade Component:** Grad LG/SNC Basis  
**Course Requirements:** PROG: Graduate School of Engineering

### CEE 2207 - CONSTRCT & COST OF MECHL SYSTEMS

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course teaches the student how to plan, organize, and execute mechanical construction operations; and the methodologies for estimating their costs. The course covers mechanical systems such as water (supply and waste), HVAC, fire protection, and their controls.

**Academic Career:** Graduate  
**Course Component:** Lecture  
**Grade Component:** Grad Letter Grade  
**Course Requirements:** PROG: Graduate School of Engineering

### CEE 2230 - BUILDING INFORMATION MODELING

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
The goal of this course is to introduce the students to building information modeling (BIM) and other new and evolving technologies which are revolutionizing the building and horizontal infrastructure construction industry. Students will learn how BIM and other innovative technologies are being adopted currently by progressive builders to streamline the construction process through enhanced coordination, visualization, logistical planning, cost estimation and analysis. They will also learn how these new tools are enabling (and in some instances requiring) new highly integrated processes that are redefining architecture, engineering, construction and operations (AECO) business relationships and delivery contracts.

**Academic Career:** Graduate  
**Course Component:** Lecture  
**Grade Component:** Grad Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### CEE 2320 - ADVANCED MECHANICS OF MATERIALS

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
The fundamentals of elasticity are introduced and related to various problems such as beams and bars on elastic foundations, unsymmetrical bending, torsion of thin walled members, curved bars, failure theories, and stability.

**Academic Career:** Graduate  
**Course Component:** Lecture  
**Grade Component:** Grad LG/SNC Basis  
**Course Requirements:** PROG: Graduate School of Engineering
CEE 2330 - ADVANCED STRUCTURAL ANALYSIS

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Graduate  
Course Component: Lecture  
Grade Component: Grad LG/SNC Basis  
Course Requirements: PROG: Graduate School of Engineering

CEE 2333 - INTRODUCTION TO FINITE ELEMENTS

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to the finite element method and its application to various problems of elastic elements and structures. Both physical and variational approaches are used.  
Academic Career: Graduate  
Course Component: Lecture  
Grade Component: Grad LG/SNC Basis  
Course Requirements: PROG: Swanson School of Engineering

CEE 2340 - CONCRETE STRUCTURES 2

Minimum Credits: 3  
Maximum Credits: 3  
Advanced behavior, strength and design of reinforced concrete structures, including column and frame stability effects, two-way slabs, and serviceability criteria. Introduction to earthquake design concepts.  
Academic Career: GRAD  
Course Component: Lecture  
Grade Component: Grad LG/SNC  
Course Requirements: PROG: Graduate School of Engineering

CEE 2341 - STEEL STRUCTURES 2

Minimum Credits: 3  
Maximum Credits: 3  
Advanced design criteria for steel structures, including composite beams, columns, and frames; member and system stability; first- and second- order analysis of frames; and serviceability criteria.  
Academic Career: Graduate  
Course Component: Lecture  
Grade Component: Grad LG/SNC Basis  
Course Requirements: PROG: Graduate School of Engineering

CEE 2343 - PRESTRESSED CONCRETE

Minimum Credits: 3  
Maximum Credits: 3  
Design of prestressed concrete beams and slabs, including shear and torsion effects.  
Academic Career: GRAD  
Course Component: Lecture  
Grade Component: Grad LG/SNC  
Course Requirements: PROG: Graduate Engineering Students
CEE 2346 - REPAIR AND RETROFIT OF STRUCTURES

Minimum Credits: 3
Maximum Credits: 3
Introduction and use of performance-based design concepts. Analysis and modeling techniques for existing and repaired structures. Gravity and lateral load retrofit procedures. Selection, modeling and design of repair and/or retrofit measures for a variety of structures and building materials. Retrofit for blast loads.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Swanson School of Engineering

CEE 2347 - BRIDGE ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Introduce concepts of bridge engineering by providing the students with the necessary knowledge and skills to apply the AASHTO IRFD specifications for the analysis and design of highway bridge superstructure components.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Swanson School of Engineering

CEE 2360 - DYNAMICS OF STRUCTURES

Minimum Credits: 3
Maximum Credits: 3
Fundamentals of free and forced vibration of one and multi degree of freedom structures, including damping. Matrix formulation of multi-degree of freedom structures. Analytical and numerical methods for determining response; deflection and stress evaluation including damping effects.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Swanson School of Engineering

CEE 2401 - OPEN CHANNEL HYDRAULICS

Minimum Credits: 3
Maximum Credits: 3
Basic theories and principles of open channel flows (including flows in rivers and streams). Methods of calculating uniform flow, gradually varied flow, rapidly varied flow, and unsteady flow. Design of open channels.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate Engineering Students

CEE 2500 - ENVRMNTL ENGRG MICROBIOL

Minimum Credits: 3
Maximum Credits: 3
Biological fundamentals as applied to the description and evaluation of natural environments and environmental quality control systems.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering
CEE 2501 - ENVIRONMENTAL ENGINEERING CHEMISTRY

Minimum Credits: 3
Maximum Credits: 3
Chemical fundamentals as applied to the description and evaluation of natural environments and environmental quality control systems.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2502 - PHYSICAL-CHEMICAL PRINCIPLES IN ENVIRONMENTAL ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Basic principles and applications of thermodynamics, reaction kinetics, equilibria, diffusion, and mass transfer.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2507 - INDUSTRIAL WASTE MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Problems and approaches to industrial waste treatment and disposal, pollution prevention and sustainability, waste minimization, process selection, control, and resource recovery.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad Letter Grade
Course Requirements: PROG: Graduate School of Engineering

CEE 2513 - ENVIRONMENTAL IMPACT ASSESSMENT

Minimum Credits: 3
Maximum Credits: 3
Technical and procedural aspects of environmental impact analysis and assessment with emphasis on regulatory framework, characterization of impacts and their remediation, and the decision process when applied to engineering systems.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2609 - LIFE CYCLE ASSESSMENT METHODS AND TOOLS

Minimum Credits: 3
Maximum Credits: 3
Life cycle assessment (LCA) is a tool for evaluating the environmental impacts of a product or process by documenting energy and material flows from inception to ultimate disposal. This course teaches framework, methods, and tools that can be applied to decision making in the design, construction, operation, and maintenance of the built environment. Topics include the principles of life cycle assessment, case studies of applications of life cycle assessment, methods for life cycle inventory, and methods for life cycle impact assessment. The course aims to encourage systems thinking and to facilitate life cycle applications to graduate students' individual research topics. Students can expect to develop a project and paper applying LCA to their research topic. In most cases, students will produce a publishable journal article at the end of the semester.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad Letter Grade

CEE 2717 - COMPONENTS, PROPERTIES AND DESIGN OF PORTLAND CEMENT CONCRETE

Minimum Credits: 3
Maximum Credits: 3
Examines the influence of constituent materials (cements, aggregates and admixtures) on the properties of fresh and hardened concrete, mix design handling and placement of concrete; and behavior of concrete under various types of loading and environment; test methods, designing concrete mixes for specific applications.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad Letter Grade
Course Requirements: PROG: Graduate School of Engineering

CEE 2801 - ADVANCED SOIL MECHANICS

Minimum Credits: 3
Maximum Credits: 3
Mathematical and graphical operations on stress and strain, seepage analysis and flow net, consolidation theory, upper and lower bound analysis, earth pressure theory, bearing capacity, and plasticity based soil models.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2802 - GEOTECHNICAL ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Fundamentals of the analytical and numerical methods in geotechnical engineering are explored. Emphasis will be placed upon implementation and verification of various formulations into basic programs. Seepage, stress distribution, settlement, consolidation, sheet piling wall, and beams on elastic foundations are some of the topics covered.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2814 - SLOPES & EARTH RETAINING STRUCT

Minimum Credits: 3
Maximum Credits: 3
Conventional methods and recent advances in slope stability analyses; classical and modern earth pressure theories; design of rigid and flexible retaining structures; earth dams, their design and stability.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC Basis
Course Requirements: PROG: Graduate School of Engineering

CEE 2818 - ADVANCED FOUNDATION ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Subsurface exploration and control of groundwater; current procedures for the analysis, design, and construction of waterfront structures and shallow
and deep foundations.

**Academic Career:** Graduate  
**Course Component:** Lecture  
**Grade Component:** Grad LG/SNC Basis  
**Course Requirements:** PREQ: CEE 2801; PROG: Swanson School of Engineering

**CLASS 0010 - GREEK CIVILIZATION**

Minimum Credits: 3  
Maximum Credits: 3  
A general introduction to the culture and society of Ancient Greece, with emphasis on the Archaic Period and the fifth and fourth centuries B.C.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**CLASS 0020 - ROMAN CIVILIZATION**

Minimum Credits: 3  
Maximum Credits: 3  
A general introduction to the culture and society of the Roman world, with emphasis on the period of the republic and the early empire.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**CLASS 0030 - MYTHOLOGY IN THE ANCIENT WORLD**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines in cultural context the traditional stories--myth, legend, and folktale--of the ancient Greeks and Romans. Theories drawn from various disciplines are critically evaluated. Attention to connections with ritual practice and to expression in daily life, art, architecture, etc.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**CLASS 0032 - ATHLETICS OF THE ANCIENT WORLD**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines athletic competition, popular games, gladiatorial and other exhibitions of the ancient Greeks and Romans. Much emphasis on the social/cultural context and underlying values. Attention to relevant artistic archaeological, and historical settings.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  

**CLASS 0034 - WOMEN AND MEN IN ANCIENT MEDITERRANEAN**

Minimum Credits: 3  
Maximum Credits: 3  
An examination of ancient Mediterranean society, particularly that of Greece and Rome, from the perspective of male and female gender roles.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
CLASS 0035 - WOMEN AND MEN ANCIENT MEDITERRANEAN/WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Writing practicum for students taking class 0034 as a writing course.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

CLASS 0037 - MYTH IN ANCIENT WORLD/WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Writing practicum for students taking class 0030 as a writing course.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

CLASS 0100 - MASTERPIECES GREEK AND ROMAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
An introduction to the critical analysis of literary works through the medium of selected masterpieces of Greek and Roman literature in English translation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 0300 - HISTORY OF ANCIENT PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
The aim of this course is to introduce students to some of the main achievements and leading ideas of Greek philosophy up to classical times. Emphasis will be on understanding and evaluating the arguments and ideas of the Greek philosophical tradition.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 0302 - HISTORY ANCIENT PHILOSOPHY/WRITING PRACTICUM

Minimum Credits: 4
Maximum Credits: 4
The aim of this course is to introduce students to some of the main achievements and leading ideas of Greek philosophy up to classical times. Emphasis will be on understanding and evaluating the arguments and ideas of the Greek philosophical tradition. Special writing component for CLASS 0300, "History of Ancient Philosophy".
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 0330 - MYTH AND SCIENCE

Minimum Credits: 3
Maximum Credits: 3
The Greeks in the sixth to fourth century B.C. initiated forms of thinking we have from then on called "scientific" and "philosophical". This course examines the question of how science is distinguished from "non-science" by studying the role of myth and science in ancient Greece. The aim is to understand what distinguishes the ideas of the first scientists and philosophers from those earlier beliefs called myth.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CLASS 0400 - ANCIENT EMPIRES**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Empires dominate and control resources over broad geographical areas, establishing systems (administrative, religious, and intellectual) to perpetuate and justify that control. The course will survey the archaeological remains of the principal empires of the ancient near East and Mediterranean, emphasizing both the modes of control and the themes or messages used to justify it.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CLASS 0500 - ANCIENT ART**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The Mediterranean Sea is a lake and its shores have produced many important cultures and artistic traditions. The course will survey the artistic traditions of Turkey and the near east, Egypt, Greece and Rome. Special attention will be paid to (1) the relationship between the artistic traditions of individual areas and the societies which produced them, and (2) the way in which influences from one culture were transformed by another.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CLASS 0600 - INTRODUCTION TO MEDITERRANEAN ARCHAEOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**CLASS 0618 - DEATH IN THE ANCIENT WORLD**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The death of a loved one is an emotional and powerful occurrence that provokes a variety of human responses. In addition to writings describing their funerary practices, the civilizations of the ancient Mediterranean region have left artistic representations of death and dying, built tombs, and objects associated with funerary rituals. The study of these texts, images, structures, and objects allows us to better understand ancient attitudes and reactions to death. This undergraduate lecture focuses on the visual and material evidence of funerary practices and beliefs in ancient Egyptian, Greek, and Roman societies. The subject will be approached thematically. First, we will explore how archaeologists discover death-related artifacts and how scholars approach the study and reconstruction of ancient death rituals. Ancient practices and beliefs regarding the mummification, the funeral, commemorative strategies, visits to the grave, and the afterlife will be explored, and images found on specific media (vases, sculpture, built tombs, paintings) will be discussed in depth. The course will conclude with discussions of the roles that sensational topics, like fear of the undead (zombies, vampires, and ghosts) and spectacles of death (gladiatorial contests and public executions), played in ancient Mediterranean civilizations.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
CLASS 0650 - ARCHAEOLOGY OF THE BODY

Minimum Credits: 3
Maximum Credits: 3
This interdisciplinary undergraduate course explores the archaeological evidence of the human body in various Mediterranean civilizations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1022 - THE AUGUSTAN AGE

Minimum Credits: 3
Maximum Credits: 3
A survey of the political, intellectual, literary, and artistic achievements of Rome in the time of Augustus.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CLASS 0020 or CLASS 1220

CLASS 1050 - COMPUTER METHODS IN THE HUMANITIES

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the use of computational modeling and programming to conduct the text-based research in the humanities. Course goals include 1) learning how to identify research questions in the humanities that are amenable to computational systems to explore those questions. No prior programming experience or knowledge of foreign languages required.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CLASS 1060 - GREEK AND LATIN ELEMENTS IN ENGLISH

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the semantic elements which have come into English from the classical languages, Greek and Latin. In addition, it provides a general introduction to the history of English and its relationship to other Indo-European languages.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CLASS 1090 - TOPICS IN CLASSICAL CULTURE

Minimum Credits: 3
Maximum Credits: 3
Study of selected topics in Greco-Roman culture.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CLASS 1130 - CLASSICAL MYTHOLOGY AND LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course examines how authors of classical antiquity used the traditional figures and stories of their culture's mythology as material for works of literature.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CLASS 1140 - GREEK TRAGEDY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Study of representative plays by the three great tragic dramatists of ancient Greece; Aeschylus, Sophocles, and Euripides. All readings are in English translation.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CLASS 1142 - ANCIENT EPIC**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Study of selected Greek and Roman epics in English translation. Among the works that may be read are Homer's Iliad and Odyssey, Apollonius' Argonautica, Virgil's Aeneid, and Ovid's metamorphoses.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CLASS 1144 - GREEK AND ROMAN LYRIC POETRY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Study of selected poems and fragments of the Greek and Roman lyric poets in English translation. Among the poets that may be read are Archilochus, Sappho, Pindar, Catullus, and Horace.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CLASS 1146 - GREEK AND ROMAN HISTORIANS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Study of selected works by Greek and Roman historians in English translation. Among the authors that may be read are Herodotus, Thucydides, Polybius, Sallust, levy, and Tacitus.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**CLASS 1151 - DEATH IN THE MEDITERRANEAN WORLD**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
In many cultures, people sometimes ask fundamental questions about their existence, including, "what happens after we die?" This course will focus on the evolution of beliefs and rituals related to death and the afterlife in and around the ancient Mediterranean basin, including egyptian, greek, etruscan, and roman cultures. Using an interdisciplinary approach, we will combine methodologies from anthropology, classics, history, and religious studies. Topics to be covered include myths of the afterlife, books of the dead, magic and death rituals, funeral practices and paraphernalia (disposal...
of the dead), cults of the dead, divinization, heaven and hell, judgment, and the impact of christianization on the ancient understanding of death.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**CLASS 1164 - GREEK TRAGEDIES AND MODERN RESPONSES**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Seminar  
- **Grade Component:** Letter Grade

**CLASS 1210 - GREEK HISTORY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC Elective Basis

**CLASS 1220 - ROMAN HISTORY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC Elective Basis

**CLASS 1231 - EMERG GRECO-ROMAN/WRIT PRAC**

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
- **Academic Career:** Undergraduate  
- **Course Component:** Credit Laboratory  
- **Grade Component:** LG/SNC Elective Basis

**CLASS 1250 - LAW & SOCIETY IN GREECE & ROME**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC Elective Basis

**CLASS 1290 - TOPICS IN ANCIENT HISTORY**
Minimum Credits: 3  
Maximum Credits: 3  
Study of selected topics in Greek and Roman history. All readings are in English translation.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CLASS 0020 or CLASS 1220 or HIST 1781

CLASS 1312 - PLATO

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced undergraduate course examining Plato's main views both in their historical context, and as they influence our own thinking today; the relations between Socrates and the sophists are also studied.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CLASS 0300 or PHIL 0200

CLASS 1314 - ARISTOTLE

Minimum Credits: 3  
Maximum Credits: 3  
This course will examine the basic concepts of Aristotle's metaphysics, physics, ethics, and logic.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

CLASS 1316 - HELLENISTIC PHILOSOPHY

Minimum Credits: 3  
Maximum Credits: 3  
An examination, at the advanced undergraduate level, of the three major schools of the Hellenistic age - the stoics, epicureans, and skeptics - and their views about ethics, epistemology, and the nature of reality.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

CLASS 1370 - MEDIEVAL PHILOSOPHY

Minimum Credits: 3  
Maximum Credits: 3  
This advanced undergraduate course examines selected major figures in European philosophy during the middle ages.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

CLASS 1390 - TOPICS IN ANCIENT PHILOSOPHY

Minimum Credits: 3  
Maximum Credits: 3  
Study of selected topics in ancient philosophy. All readings are in English translation.  
Academic Career: Undergraduate
CLASS 1402 - GRECO-ROMAN RELIGIONS

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to religious texts and traditions in a formative era of Western civilization and culture. Our focus will be on the variety of religious expression in Greco-Roman culture, which flourished in the geographical area of the Mediterranean basin during the first five centuries of the common era. By considering such topics as debates about the nature of the gods and access to them (through oracles, ritual and magic), the emergence of the idea of the holy person, and a variety of religious traditions as expressed in prayer, ritual and art, students will encounter a rich religious imagination that is truly different from contemporary understandings of religion and yet strangely familiar as well. We will also explore the complete integration between religion politics in the ancient world.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1430 - ORIGINS OF CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
This course presents a historical-critical investigation of Christian origins. Special attention is paid to varieties of 1st century Hellenistic and Palestinian Judaism within the Greco-Roman world. Primary readings include selected Biblical passages and apocrypha, 1st century historians and philosophers (Josephus, Tacitus, Suetonius, and Philo), the New Testament corpus (including Paul and the Pastorals), and selected readings from the Dead Sea Scrolls. In addition there will be assignments from various modern New Testament critics, historians, and theologians.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1432 - VARIETIES OF EARLY CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
An examination of the diverse strands of Christianity as developed both in the Christian bible and outside of it.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1450 - JEWS AND JUDAISM IN THE ANCIENT WORLD

Minimum Credits: 3
Maximum Credits: 3
Judaism in the Hellenistic/roman period is examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1510 - GREEK ART

Minimum Credits: 3
Maximum Credits: 3
The study of Greek art begins ca. 3000 B.C. In the so-called "age of bronze" and traditionally ends in 30 B.C. With the completion of the roman conquest of the eastern Mediterranean. The course will trace the development of architecture, sculpture and painting in mainland Greece and to a lesser extent in the Greek colonies of Asia minor and Italy, emphasizing the changes in style and taste which took place over this period.
CLASS 1520 - ROMAN ART

Minimum Credits: 3
Maximum Credits: 3
Roman art served as the funnel through which the principles of Greek art passed into European culture, but the principles were transformed in the process of transmission. The course will trace the beginnings and subsequent development of the arts of painting, sculpture, and architecture in Italy from the period of the kings, and the middle years of the empire (ca. 150 A.D.).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1524 - ROMAN ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
The course will examine the development of Roman architecture from its origins in Etruria and central Italy to the middle empire (ca. 150 A.D.). Special attention will be given to the relationship of architectural forms, types and functions to changes in Roman politics and society and the significance of materials and outside influences on the development of local Italian traditions and forms. The interaction between roman architectural forms and local traditions in the provinces to create a Roman imperial "koine", will be treated only in passing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1610 - GREEK ARCHAEOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the archaeologist's task of bringing lost societies back to light through the study of their physical remains and material culture. By examining ancient Greek art, architecture, inscriptions, burials, coins, and the many everyday objects that survive from antiquity, archaeologists are able to shine light on details of Greek society that are often totally inaccessible from the surviving literary and historiographical record. The course begins with an examination of the archaeology of the bronze age, and presents a survey of the archaic, classical, and Hellenistic periods, as well as a history of the archaeological discipline itself from the nineteenth century to today.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

CLASS 1630 - MARGINALITY IN THE ANCIENT GREEK WORLD

Minimum Credits: 3
Maximum Credits: 3
This undergraduate course surveys the literary and material evidence of marginality in the ancient Greek world. This course includes an introduction to Greek culture, a discussion of common terms associated with marginality. Different groups who were marginalized, such as those of low socioeconomic status, those of differing ethnicity and race, the disabled and deformed, the mentally ill, slaves and other marginalized individuals will be discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1650 - WARFARE: ANCIENT MEDITERRANEAN
Since the dawn of civilization, warfare has been a constant threat to society. Although the material remains of ancient warfare survive in the archaeological record, the literary accounts of Greco-Roman authors provide us with additional evidence to reconstruct developments in, and attitudes toward, armed conflict in the ancient Mediterranean region. This undergraduate course surveys the literary and material evidence of Greco-Roman warfare. Significant battles, developments, strategies, and attitudes are presented chronologically, and special attention is paid to issues of biological and chemical warfare, votive dedications and war trophies, casualties and commemoration, civilian impact, and the effects of post-traumatic stress disorder. This class is a designated W-course, so considerable attention will be paid to developing critical reading, writing, and oral presentation skills.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

CLASS 1710 - SANSKRIT 1

Minimum Credits: 3
Maximum Credits: 3
An introduction to the basic structure and vocabulary of Sanskrit. Approximately half of the course is devoted to an intensive survey of Sanskrit grammar and half to the reading of a selection from the Mahabharata.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1720 - SANSKRIT 2

Minimum Credits: 3
Maximum Credits: 3
A continuation of Sanskrit 1, this course is devoted to the reading of selected Sanskrit texts. Grammar presented in Sanskrit 1 is reviewed as necessary and some additional grammatical material is introduced.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1730 - SANSKRIT 3

Minimum Credits: 3
Maximum Credits: 3
A continuation of Sanskrit 2, this course is an introduction to Vedic Sanskrit and to the reading of selected hymns from the Rig-Veda.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CLASS 1720

CLASS 1740 - SANSKRIT 4

Minimum Credits: 3
Maximum Credits: 3
In this course, a continuation of Sanskrit 3, students read selected portions of Kaladana's play Sakuntala.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CLASS 1900 - INTERSHIP IN CLASSICS
Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

CLASS 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
In this course a student undertakes independent study in the field of classical civilization in consultation with a member of the faculty.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

CLASS 1902 - DIRECTED STUDY FOR UNDERGRADS

Minimum Credits: 1
Maximum Credits: 9
In this course a student undertakes directed study in the field of classical civilization under the close guidance of a member of the faculty.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

CLASS 1903 - DIRECTED RESEARCH FOR UNDERGRADS

Minimum Credits: 1
Maximum Credits: 9
In this course a student undertakes directed research in the field of classical civilization under the close guidance of a member of the faculty.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

CLASS 1908 - DIRECTED WRITING FOR MAJORS

Minimum Credits: 1
Maximum Credits: 1
In addition to whatever written assignments are required of those enrolled in the course, this directed writing-practicum provides students with an opportunity to contribute writing designed in terms of the intellectual strategies of the course.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

CLASS 1990 - UNDERGRADUATE TEACHING ASSISTANTSHIPS IN CLASSICS

Minimum Credits: 1
Maximum Credits: 5
This course allows students to earn credits for serving as undergraduate teaching assistants in courses listed under the 'classics' subject code. Admission requires permission of the department chair. Students may repeat for credit.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade
PEDC 0001 - BEGINNING SWIMMING

Minimum Credits: 1
Maximum Credits: 1
For students who are unable to swim or who can swim very little. Opportunities are presented to learn basic functional aquatic skills and basic strokes. Students are permitted to set their own achievement goals. Instruction is on an individual basis.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

PEDC 0002 - INTERMEDIATE SWIMMING

Minimum Credits: 1
Maximum Credits: 1
For students who have learned the mechanics of basic aquatic strokes and are interested in the development of proper rhythm and timing necessary for good performance in swimming. Students are permitted to set their own achievement goals. Instruction is on an individual basis.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PEDC 0010 - WATER AEROBICS

Minimum Credits: 1
Maximum Credits: 1
Improve your fitness in the enjoyable aquatic environment. This program is designed for all ages. Each enrollee will be permitted to participate at their own level gradually improving their muscle tone, cardiac, and respiratory fitness levels. This program will be conducted in shallow water so that the non-swimmer may participate.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PEDC 0015 - KAYAK PADDLING

Minimum Credits: 1
Maximum Credits: 1
Instruction for the beginning kayaker in basic strokes and rolls. This course offers aca certification for basic kayak paddling, pool practice sessions, and an openwater trip.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PEDC 0022 - AEROBIC DANCE

Minimum Credits: 1
Maximum Credits: 1
Improve your fitness levels with this aerobic dance to music course. One of America's most popular ways to exercise. This program is for all ages. Each enrollee will be permitted to participate at his/her own level, gradually improving muscle tone, cardiac, and respiratory fitness.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PEDC 0023 - WEIGHT TRAINING
A coeducational class designed to provide the student with the opportunity to develop and practice basic weight training techniques. With the guidance of the instructor, the student will be encouraged to develop an individualized self-designed program. The emphasis of this course will be placed on progressive-resistive exercises.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**PEDC 0025 - AEROBICS-CROSS COUNTRY RUNNING**

Minimum Credits: 1  
Maximum Credits: 1  
Primarily involves a training program of light to moderate intensity with increased cardiovascular fitness and improved quality of life as a goal. In support of the instruction on cross-country running, students will receive some background information on aerobics in the form of handouts and mini lectures.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**PEDC 0026 - AQUATIC CONDITIONING**

Minimum Credits: 1  
Maximum Credits: 1  
Good swimmers who want to learn how to use swimming to maintain or improve their physical fitness should register for this course. Students may determine their capacity for exercise, and they may learn how to apply this effort in the water.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**PEDC 0031 - MODERN DANCE 1**

Minimum Credits: 1  
Maximum Credits: 1  
Introduces the college student to modern dance as a point of view, rather than a particular technique. There will be exercises to increase strength, and flexibility, as well as to teach techniques of movement, exploration and improvisation. Emphasis is on developing a sensitive awareness of one's own body movement in time and space.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade

**PEDC 0032 - MODERN DANCE 2**

Minimum Credits: 1  
Maximum Credits: 1  
This course is designed for those students who have mastered beginning dance technique and wish to gain more advanced skills. Advanced technique and compositional work is stressed. Course objectives include increased technical skills, awareness and appreciation of modern dance as an art form, ease in phrasing rhythmical movement and skill in improvisational movement.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**PEDC 0033 - BALLET 1**
Minimum Credits: 1
Maximum Credits: 1
For absolute beginners introducing them to basic fundamentals of the classic ballet technique.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

PEDC 0034 - BALLET 2

Minimum Credits: 1
Maximum Credits: 1
An intermediate class, taught as a continuation of ballet 1. Also a class for students who may have some ballet training before coming to college. Audition for class eligibility at the first class session or permission of instructor.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

PEDC 0040 - CHOREOGRAPHY

Minimum Credits: 1
Maximum Credits: 1
The art of making dances. Studies dealing with timing, grouping, energy, quality, etc., Lead to the creation of dances. Designed for students who wish to explore the creative process or for those wanting more advanced dance training.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

PEDC 0041 - JAZZ 1

Minimum Credits: 1
Maximum Credits: 1
Fundamentals of jazz dance for beginning dance students. Class includes warm-up, center floor, and cross floor movement combinations, contemporary jazz and pop music is emphasized.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PEDC 0042 - JAZZ 2

Minimum Credits: 1
Maximum Credits: 1
A continuation of the basic fundamentals learned in jazz 1. More emphasis is placed on longer routines and more complicated movement sequences. It is an intermediate jazz class.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PEDC 0044 - DANCE PRODUCTION

Minimum Credits: 2
Maximum Credits: 2
This course is designed to familiarize students with both the technical and production aspects of dance and to increase appreciation of dance in all its forms.

Academic Career: Undergraduate
PEDC 0048 - RACQUETBALL 1

Minimum Credits: 1  
Maximum Credits: 1  
This course is designed to introduce the beginner to the significant components of racquetball. Three types of racquetball games, singles, doubles, and cut throat, will be introduced in conjunction with individual skill development. The grip, ready position, racquet swing, service, return of service, and shot making will be covered. Game strategies and rules and regulations will be reviewed.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

PEDC 0049 - BADMINTON

Minimum Credits: 1  
Maximum Credits: 1  
This course is designed to introduce the beginner to the significant components of badminton. The following basic strokes will be presented in class; forehand and backhand, overhead clear, high singles service, low doubles service, smash and drop. Rules and regulations and strategies for doubles and singles games will be presented.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

PEDC 0050 - RACQUETBALL 2

Minimum Credits: 1  
Maximum Credits: 1  
This course provides basic stroke mechanics, practice drills, and winning strategies for advanced players with a knowledge of the game of racquetball. Class time will deal in depth with the drive, lob, overhead z-serves, serve returns, back wall play, and training aids. Developing strategies for winning in singles and doubles will be dealt with extensively in class.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

PEDC 0065 - VOLLEYBALL

Minimum Credits: 1  
Maximum Credits: 1  
This course is designed to introduce the beginner to the significant components of volleyball. Basic skills to be taught will include the overhead volley, forearm pass, service, spike, individual block and defensive recovery skills. A 4-2 right-side-setter offensive system will be introduced with a 6-back and a 6-up defensive system. All rules and regulations will be reviewed during the course.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

PEDC 0068 - JUDO 1

Minimum Credits: 1  
Maximum Credits: 1  
An intensive study of the basic physics and principles governing the art of judo. It is no longer an oriental mystique. Today, judo is practiced worldwide by men and women of all ages. The "judoka" (student) will acquire confidence as well as improved physical endurance. In addition to this, the student will begin to grasp the true meaning of judo and find how it can apply to life in general. Judo gi is required.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

PEDC 0069 - JUDO 2

Minimum Credits: 1
Maximum Credits: 1
A continuation of Judo 1 including mat techniques such as strangle, joint lock, and pinning. New students must have a yellow belt.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0077 - SKIING

Minimum Credits: 1
Maximum Credits: 1
Instruction is given on all ability levels. Instruction and skiing are provided at Seven Springs Resort, Champion, PA. Lessons will be conducted by certified PSIA instructors and staff.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

PEDC 0079 - ICE SKATING

Minimum Credits: 1
Maximum Credits: 1
Beginners may learn to skate and skaters may learn to skate better. Figure skating is the basic program. Some introduction to understanding of ice hockey.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

PEDC 0080 - RIFLE-PISTOL MARKSMANSHIP

Minimum Credits: 1
Maximum Credits: 1
Provides the basic fundamentals in practical application of the proper techniques utilized for recreation, target and competition shooting.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

PEDC 0086 - CERTIFIED POOL AND SPA OPERATOR

Minimum Credits: 1
Maximum Credits: 1
A practical course dealing with the sanitation, circulation and filtration of swimming pool water. An excellent course for students who are interested in employment as a swimming pool manager or custodian.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PEDC 0087 - PERSONAL DEFENSE
Minimum Credits: 1  
Maximum Credits: 1  
Offers physical conditioning and self-defense through the application of judo. Emergency self-defense from various attacks will be taught utilizing basic throwing, grappling, and striking techniques. Students develop a deep respect for others, inner security, and self-confidence. The purpose of this course is to defeat an opponent through the most efficient use of mind and body, but doing so on the principle of ”giving away” under his attack or effort.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

PEDC 0090 - VARSITY SPORTS 1

Minimum Credits: 1  
Maximum Credits: 1  
Students may earn four credits in physical education by participating in a varsity sport. One credit only per term. Student must be a varsity athlete.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade  
Course Requirements: STDNT GRP: Student Athlete or Cheer / Dance

PEDC 0091 - VARSITY SPORTS 2

Minimum Credits: 1  
Maximum Credits: 1  
Students may earn one credit in physical education by participation in a varsity sport for his/her second term.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade  
Course Requirements: PREQ: PEDC 0090; STDNT GRP: Student Athlete or Cheer / Dance

PEDC 0096 - WINTER CAMPING

Minimum Credits: 1  
Maximum Credits: 1  
A weekend course designed to provide the student with backpacking experience and the knowledge necessary to extend his outdoor enjoyment to four seasons. All weather equipment including backpacks, sleeping bags, pads, tents, and stoves will be provided to students needing gear. Although ski touring is part of this course, experience is not required and necessary skills may be quickly learned.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade

PEDC 0099 - BASIC ROCK CLIMBING

Minimum Credits: 1  
Maximum Credits: 1  
Beginning with bouldering, the course will deal primarily with rope handling and moving on vertical rock planes in a safe manner. Covered in this course are bouldering, friction and balance climbing, 3-point suspension, use of ropes, knot craft, body rappelling, free rigging climbs, mountain safety, basic belaying, use of webbing (slings and harnesses), chimney techniques and natural protection.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

PEDC 0133 - LIFE GUARDING 1
For the intermediate level or above swimmer who wishes to gain national red cross lifeguard certification. Training is specifically designed to prepare enrollers for lifeguarding pools and openwater beaches. Advanced lifesaving, community first aid, and CPR certifications are required if not already obtained before course completion.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis  

**PEDC 0135 - BASKETBALL 1 - CO-EDUCATIONAL**

Minimum Credits: 1  
Maximum Credits: 1  
Supervised competition follows a conditioning period in which individual skills and team strategy are stressed. Opportunity to improve on previously acquired skills and become a team member is provided.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis

**PEDC 0146 - FIRST AID AND CPR**

Minimum Credits: 1  
Maximum Credits: 1  
A laboratory-lecture course in which American red cross techniques of cardiopulmonary resuscitation (CPR) and standard first aid are presented. All students who meet the American red cross standards will receive American red cross certification.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**PEDC 0147 - WATER SAFETY INSTRUCTOR**

Minimum Credits: 2  
Maximum Credits: 2  
The water safety instructor course is designed to earn certification to teach American red cross swimming and water safety courses. The course focuses on planning, organizing, sequencing, skill development, and red cross operational policies and procedures.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0153 - VARSITY SPORTS 3**

Minimum Credits: 1  
Maximum Credits: 1  
Students may earn one credit in physical education by participation in a varsity sport for his/her third term.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: PEDC 0091; STDNT GRP: Student Athlete or Cheer / Dance

**PEDC 0154 - VARSITY SPORTS 4**

Minimum Credits: 1  
Maximum Credits: 1  
Students may earn one credit in physical education by participation in a varsity sport for his/her fourth term.
PEDC 0158 - WEIGHT TRAINING 1

Minimum Credits: 1
Maximum Credits: 1
A coeducational class designed to provide the student with the opportunity to develop and practice basic weight training techniques. With the guidance of the instructor, the student will be encouraged to develop an individualized self-designed program. The emphasis of this course will be placed on progressive-resistive exercises.

PEDC 0162 - DANCE BASICS

Minimum Credits: 1
Maximum Credits: 1
For those people who always had a desire to learn to dance but were intimidated by a formal class. Break your own stereotype! If increasing your flexibility, strength, coordination and rhythmic awareness is a goal, you can do it in an enjoyable atmosphere of sound and movement. Learn dance fundamentals that are used in ballet, jazz, and modern dance. Some social dance and folk dance movements are included. Barre and floor warm-up and movement sequences are contained in each class.

PEDC 0164 - PARTY DANCE

Minimum Credits: 1
Maximum Credits: 1
This class will focus on generic dance movements that you can use in social dance situations. Hip-hop, line dances like electric slide and achey-breaky, and free form styles will be highlighted. Understanding rhythm and moving rhythmically will also be included. Learn how to learn dance so you can feel confident at weddings, house parties and clubs. This is strictly for non-dancers that want to become dance confident.

PEDC 0171 - FITNESS KICK BOXING

Minimum Credits: 1
Maximum Credits: 1
Our exercise program is based on the concepts of boxing, karate, muay thai kick boxing, and total fitness accompanied by rhythmic music. Conditioning is focused on the areas of endurance, strength, and flexibility; all of which can bring about positive physical changes in participating students. Aerobic and anaerobic power training with speed bag and heavy bag is part of the training module.

PEDC 0173 - SNOBOARDING

Minimum Credits: 1
Maximum Credits: 1
Instruction is given on all ability levels. Three-5 hour sessions of instruction and boarding plus one-5 hour session of boarding are provided at seven springs ski resort.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

PEDC 0175 - AEROBIC FITNESS BOXING

Minimum Credits: 1
Maximum Credits: 1
Our exercise program is based on the concepts of boxing, karate, muay thai kick boxing, and total fitness accompanied by rhythmic music. Conditioning is focused on the areas of endurance, strength, and flexibility; all of which can bring about positive physical changes in participating students. Aerobic and power training are a part of the enduring comprehensive training module.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0180 - VOLLEYBALL 1

Minimum Credits: 1
Maximum Credits: 1
This course is designed to introduce the beginner to the significant components of volleyball. Basic skills to be taught will include the overhead volley, forearm pass, service spike, individual block and defensive recovery skills. A 4-2 right-side-setter offensive system will be introduced with a 6-back and a 6-up defensive system. All rules and regulations will be reviewed during the course.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0193 - PERSONAL FITNESS

Minimum Credits: 1
Maximum Credits: 1
An organized approach to health related fitness with diagnostic and prescriptive assessment. The emphasis is on an individual, self-designed program based on scientific principles with the goal of personal improvement and fitness knowledge of primary importance. Various types of exercise will be incorporated into class times.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0194 - SPORTS CONDITIONING

Minimum Credits: 1
Maximum Credits: 1
This course includes sport specific training for a multitude of sports including plyometric, speed and agility training, resistance training and will incorporate different modes of aerobic training. This course focuses on how to train different types of athletes and how each specific type of training is related to the sport/event involved. This is a high intensity exercise course and should not be taken if the student is not apparently healthy and has not already had at least some experience in sport and/or fitness related fields.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0196 - FIRST AID AND CPR
Minimum Credits: 2
Maximum Credits: 2
A 2-credit lab/lecture discussion course in which American Red Cross techniques of cardiopulmonary resuscitation (CPR) for the professional rescuer and community first aid and safety are presented. In addition to these skills, current methods of management and treatment of emergency illnesses and injuries are also taught. American Red Cross certification available to all students who meet the standards.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0197 - BOOTCAMP FITNESS

Minimum Credits: 1
Maximum Credits: 1
If you want to increase your fitness level, burn fat, look great and feel fantastic, then take your workout to the next level in boot camp fitness! A typical class will include cardio exercise such as jump rope, jumping jacks, jogging as well as muscular endurance exercises such as push-ups, squats, lunges, etc. Everyone will be encouraged to excel to their very best but will not be pushed to the point of injury or pain. All exercises can be modified to suit each participant's needs.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0206 - BODY SCULPTING 1

Minimum Credits: 1
Maximum Credits: 1
Exercise to music in this non-impact class designed to develop muscular definition, firming, toning, and strength. Weights and other resistive devices will be incorporated into workout routines.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0207 - PILATES

Minimum Credits: 1
Maximum Credits: 1
The Pilates method of body conditioning strengthens and tones muscles, improves posture, provides flexibility and balance, unites body and mind, and creates a more streamlined shape. Pilates is great for people of all ages and fitness levels, as it uses your body's own natural resistance to define and elongate the muscles.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0209 - "ON THE BALL"

Minimum Credits: 1
Maximum Credits: 1
A 60 minute resistance training workout using stability balls, hand weights, and resistance tubing. This class will focus on increasing core strength, as well as overall muscle tone, balance, and coordination. A nice compliment to your cardio workout!

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0211 - WATER FITNESS
Improve your fitness in an enjoyable environment! This program is designed for all ages allowing the student to participate at his or her own level. Students will gradually improve muscle tone and cardiac fitness levels. The program is conducted in shallow water so that non-swimmers may participate.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0222 - CYCLE EXERCISE**

Minimum Credits: 1  
Maximum Credits: 1  
This class is for anyone that wants a killer cardiovascular workout without being bored on a traditional cardio machine. Spinning bikes simulate an outside ride by allowing you to change positions on the bike as well as resistance to simulate hills. This class will incorporate sprints, seated climbs, standing climbs, jumps and more for an anything-but-boring workout! During the class, you can work at your own intensity level whether it is light to moderate or vigorous. Spinning is great for anyone and everyone including cyclists as well as those of you that aren't the best of cyclists. No bike riding experience is necessary for this class.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0225 - BUDO**

Minimum Credits: 1  
Maximum Credits: 1  
An overview of martial arts which combines the practice of kobudo, ancient weaponry-bo (long stick), jo (short stick), sia, aiki, sumo jujitsu & karate do. Class will incorporate the use of ancient weaponry and the art of ju-jitsu, which is composed of falling, throwing, pressure points, disarming skills against the weapon, the art of restraining, and ground grappling. This course will cover the history and philosophy of these activities and also physically using tactical application. Budo will provide student insight on how different disciplines are combined and used.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0226 - FITNESS BOXING 1**

Minimum Credits: 1  
Maximum Credits: 1  
For students who want a high level of fitness achieved through learning various beginning, non-contact boxing skills and techniques. Skills include: shadow boxing, defensive techniques, non-contact sparring, heavy bag workout, speed bag techniques, rope jumping, and strength and conditioning exercises.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0231 - SOCCER 1**

Minimum Credits: 1  
Maximum Credits: 1  
For the beginner who wishes to develop competence in the skills, rules, and strategies required for participation in soccer.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade
PEDC 0232 - TOUCH FOOTBALL 1

Minimum Credits: 1  
Maximum Credits: 1  
A co-educational course designed to provide the student with an opportunity to develop the fundamental skills of football, along with experimenting with organized competition in touch football games.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade

PEDC 0235 - AEROBICS: LOW IMPACT, HIGH ENERGY

Minimum Credits: 1  
Maximum Credits: 1  
This class is great for individuals of all fitness levels. Cardiovascular exercise including dance and step aerobics is combined with resistance training using hand weights, resistance bands and/or weighted bars. Abdominal and core work is also included.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade

PEDC 0236 - AEROBIC MIX

Minimum Credits: 1  
Maximum Credits: 1  
This is a great class for anyone who loves variety! This course provides a mixture of various types of cardiovascular exercise including, but not limited to, hi-lo floor aerobics, step aerobics and cardio kickboxing. In addition, resistance training, yoga and/or pilates may be incorporated into the exercise sessions. Classes will vary at the instructor's discretion.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade

PEDC 0237 - AEROBIC EXERCISE

Minimum Credits: 1  
Maximum Credits: 1  
This class is for those who prefer floor aerobics to step aerobics. The class will include predominantly hi-lo floor aerobics. Other forms of exercise may include resistance training, yoga and pilates.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade

PEDC 0239 - STEP AEROBICS 1

Minimum Credits: 1  
Maximum Credits: 1  
Step aerobics is a low-impact aerobic exercise. Improve your fitness level with step aerobics to music. This program is for all ages. Every student will be permitted to participate at his/her own level. This course will gradually improve your muscle tone, cardiac output, and respiratory fitness levels.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade

PEDC 0242 - AMER RED CROSS LIFEGUARD INSTRC
Minimum Credits: 2
Maximum Credits: 2
American red cross lifeguard training for instructors will certify the student to teach various components of American red cross classes, i.e. Lifeguard training, adult and child, CPR for the professional rescuer, and community first aid and safety classes. This certification enables students to teach the above mentioned classes in any state authorized by the American red cross.

**Academic Career:** Undergraduate
**Course Component:** Practicum
**Grade Component:** Letter Grade

**PEDC 0243 - AMER RED CROSS FIRST/CPR INSTRC**

Minimum Credits: 2
Maximum Credits: 2
American red cross standard first aid and CPR for instructors will certify the student to teach various components of American red cross classes, i.e. Adult, infant and child, and CPR for the professional rescuer, as well as community first aid and safety classes. This certification enables students to teach the above mentioned classes in any state authorized by the American red cross.

**Academic Career:** Undergraduate
**Course Component:** Practicum
**Grade Component:** Letter Grade

**PEDC 0244 - DANCE PRODUCTION 2**

Minimum Credits: 2
Maximum Credits: 2
This course is designed to familiarize students with both the technical and production aspects of dance in all its forms. The students will have experiences with lighting, costume, choreography, public relations, and stage management.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade

**PEDC 0246 - POOL OPERATIONS/EVENT MANAGEMENT**

Minimum Credits: 1
Maximum Credits: 3
Course will cover all aspects of pool operations including safety requirements, scheduling, emergency action plan, lifeguard rotations and filtration. Section on event management will include scheduling, set up and break down of competition pool including lane ropes, touchpads, flags, blocks, and timing system. Attendance at pre-determined pool events will be required. Total number of credits earned will be based on minimum number of hours worked.

**Academic Career:** Undergraduate
**Course Component:** Practicum
**Grade Component:** Letter Grade

**PEDC 0262 - YOGA 1**

Minimum Credits: 1
Maximum Credits: 1
An elementary course on the practice and theory of the basic principles of yoga. This class will provide students with a plan to focus on their particular bodies' strengths and weaknesses plus increase flexibility.

**Academic Career:** Undergraduate
**Course Component:** Credit Laboratory
**Grade Component:** Letter Grade

**PEDC 0263 - YOGA 2**
Minimum Credits: 1
Maximum Credits: 1
An intermediate level course on the theory of basic principles of yoga.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

**PEDC 0264 - POWER YOGA**

Minimum Credits: 1
Maximum Credits: 1
This class is for anyone that has some previous yoga experience and would like a physical challenge, and doesn't mind breaking a sweat! Power yoga is a form of Ashtanga yoga that emphasizes strength and flexibility. This class is not a gentle form of yoga; however, participants will be encouraged to progress at their own levels and will be given modifications for difficult movements.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

**PEDC 0265 - YOGA AND PILATES TOTAL BODY TONER**

Minimum Credits: 1
Maximum Credits: 1
Take the best of yoga and Pilates and gain the streamlined body you've always dreamed of. Yoga and Pilates is a fresh and exciting approach targeting specific parts of the body with four separate workouts and concentrating on problems areas. Combined, these workouts offer a solution to weight loss while promoting relaxation from stress!
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

**PEDC 0266 - PILATES FUSION**

Minimum Credits: 1
Maximum Credits: 1
Pilates fusion is based on the Pilates system, but is more movement centered, as we transition from one form to the next through movement stretches taken from release methods. These release methods are designed to lengthen and to soften the muscles. The movements are constant, so there is flow and connection rather than a static approach. There is a focus on proper form, finding center through the pelvis, core strengthening and its relation to the back. Techniques from yoga practice are also incorporated into this class.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

**PEDC 0267 - BEGINNING KARATE**

Minimum Credits: 1
Maximum Credits: 1
An introduction on the principles and techniques of traditional shotokan karate. Students will begin training with physical conditioning and basic blocking, striking, punching, and kicking techniques.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

**PEDC 0287 - PERSONAL DEFENSE 1**
The purpose of this course is to teach students how to defeat an opponent through the most efficient use of mind and body, but doing so on the principle of "giving away" under his/her attack or effort. Emergency self-defense from various attacks will be taught utilizing basic judo techniques and the "byam" method.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0340 - KETTLE BELL AND CONDITIONING**

Minimum Credits: 1  
Maximum Credits: 1  
This class is designed to provide the student with a total body strength and cardiovascular workout utilizing kettle bell equipment and various strength conditioning techniques. Emphasis is on circuit style or continuous training with the goal of progressively increasing the intensity and difficulty of the workout throughout the semester.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0361 - FITNESS DANCE**

Minimum Credits: 1  
Maximum Credits: 1  
This class, set to contemporary music, is designed to get your moving while learning fun and exciting dance movements! The class begins with a warm-up consisting of fundamental dance principles and techniques that will prepare you to move into dance phrases and choreographed movement. The class cools down with a series of stretches and muscle relaxing exercises. No previous dance training is required.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0362 - TOTAL BODY FUSION**

Minimum Credits: 1  
Maximum Credits: 1  
This class is for anyone looking to increase cardiovascular fitness, firm and tone muscles, increase flexibility and de-stress. A typical class starts with cardiovascular exercise such as step aerobics, kickboxing and/or hi-lo aerobics, moves to body sculpting using free weights, bands and balls and finishes up with core work and stretching exercises. If you like a little of everything, this is definitely the class for you!

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**PEDC 0363 - ZUMBA**

Minimum Credits: 1  
Maximum Credits: 1  
Zumba is a one of kind combination of dance and exercise, designed to put "Fun" back into fitness. The zumba workout maximizes caloric output, fat burning, and total body toning. The routines feature aerobic interval training with a combination of fast and slow rhythms that tone and sculpt the body. Exotic and explosive Latin rhythms create a party like atmosphere that delivers results, as well as a "Feel happy" workout. No previous experience in dance is needed to have fun with zumba.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade
PEDC 0366 - INTRODUCTION TO DANCE

Minimum Credits: 3
Maximum Credits: 3
A comprehensive overview of dance as an art form and physical activity, covering the history and philosophy of dance. Dance will be examined as a means of communication and expression, and its relationship to other art forms. A particular emphasis will be placed on Western dance forms and its multicultural roots.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PEDC 0367 - BALLROOM 1

Minimum Credits: 1
Maximum Credits: 1
Beginners course: professional instruction in the smooth dances: waltz, fox-trot, tango and Viennese and Latin dances, cha cha, rumba, samba, mambo, etc.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0368 - LATIN RHYTHM AND SWING

Minimum Credits: 1
Maximum Credits: 1
Call it mambo, call it rock-n-roll.....Beginner, learn the basic footwork, turns and combination figures to these fiery dances. Learn to lead a partner. And partner, learn to follow the leader. Leading and following emphasized. Floor craft and dance etiquette will be taught. Styling and technique added to complete all dances. Also, special attention to timing and music recognition.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 0380 - CARDIO PILATES

Minimum Credits: 1
Maximum Credits: 1
This class begins with aerobic exercise of various formats including: hi-lo, step and kickboxing to get your heart rate elevated and body moving. It then progresses to a short cool-down period and finishes with pilates mat exercises to sculpt your muscles and stretch your body. This class is great for anyone looking to increase cardiovascular fitness as well as strengthen, stretch and tone the muscles.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 1002 - TAE KWON DO 1

Minimum Credits: 1
Maximum Credits: 1
An ancient Korean martial art that is a free-fighting, self-defense sport in which the athlete's entire body is a weapon. Tae kwon do requires physical training, coordination, and a high degree of mental discipline.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
PEDC 1003 - TAE KWON DO 2

Minimum Credits: 1
Maximum Credits: 1
A continuation for students in Tae Kwan Do 1. Learn to compete olympic style. Competition and advanced style defense techniques will be taught. New students must have a yellow belt.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 1006 - JIU JITSU

Minimum Credits: 1
Maximum Credits: 1
Jiu jitsu is a method of defense without weapons using hand, foot, and hip techniques combined with grappling and choke holds designed to render your attacker helpless and to help you gain more self-confidence. Jiu jitsu is not a contest of muscular strength. When practiced properly a smaller person can easily defend themselves against a larger person.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 1141 - FITNESS FOR INSTRUCTORS

Minimum Credits: 2
Maximum Credits: 2
Fitness for instructors will teach the student the major elements of fitness. How to assess fitness levels, determine fitness goals, design fitness programs and facilities. The course will be a combination of classroom, exercise, and practical experiences.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 1143 - TEACHING MIND/BODY EXERCISE

Minimum Credits: 2
Maximum Credits: 2
This is a course designed to prepare students to become instructors for mind/body classes including pilates and yoga. The course will begin with a brief overview of the history behind various mind/body formats and then move to practical application. Students will learn basic anatomy related to exercise as well as how to properly teach exercises and breathing techniques. Upon completion of the course, students should be capable of instructing pilates and yoga classes, as well as have a comprehensive understanding of the theories and principles behind the disciplines. No prior instructing experience is necessary.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 1211 - ATHLETIC INJURY PREVENTION

Minimum Credits: 3
Maximum Credits: 3
This course is designed to provide the student with an introduction to the athletic training profession. Topics include medical terminology, mechanisms of injury, and recognition and treatment of common athletic injuries to major body parts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: PEDC 1212
PEDC 1212 - ATHLETIC INJURY PREVENTION LAB

Minimum Credits: 1
Maximum Credits: 1
An introduction to basic taping techniques and injury evaluation techniques used in the profession of athletic training. Basic supportive strappings and paddings for immediate care and competition are presented as well as basic joint evaluation procedures, massage, and crutch fitting.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: Letter Grade
Course Requirements: CREQ: PEDC 1211

PEDC 1233 - PRIN OF STRENGTH AND CONDITIONING

Minimum Credits: 2
Maximum Credits: 2
Instruction is provided describing the principles for development of pre-season, in-season and off-season strength and conditioning programs. Laboratory experiences will include the theory and techniques of operating strength training equipment.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 1240 - AEROBICS FOR INSTRUCTORS

Minimum Credits: 2
Maximum Credits: 2
This course will prepare the student to teach various components of aerobic exercise, i.e., Aerobic fitness boxing (tae bo), hi-low impact, step aerobics, circuit training, interval bench, water aerobics, and the like. The course will not certify instructors, however, it will prepare the student to obtain certification from national organizations with written and practical exams.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 1300 - NUTRITION IN EXERCISE AND SPORT

Minimum Credits: 1
Maximum Credits: 1
This course will provide the student with basic nutritional information as it pertains to sport and exercise performance. Topics of discussion include weight reduction and management, nutritional requirements for athletic performance and maintenance of a healthy lifestyle, proper eating habits, diet fads, disordered eating, and supplementation.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

PEDC 1488 - WEIGHT MANAGEMENT AND PHYSICAL ACTIVITY

Minimum Credits: 2
Maximum Credits: 2
This course is designed for students who meet the clinical criteria for being overweight (body mass index > 25 kg/m2) and who desire to lose weight, improve their nutrition, and increase their exercise. This course will combine instruction on behavioral techniques to lose and maintain weight loss along with supervised cardiovascular and resistance exercise. Students will be assessed at the beginning and end of the course to monitor changes in weight, body composition, fitness and other factors.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
CGS 0092 - MASTERING THE UNIVERSITY: ACADEMIC AND CAREER EXPLORATION 1

Minimum Credits: 1
Maximum Credits: 1
This course is the first of a two course series aimed at helping students develop both academically and professionally. In this first course, students will explore strategies, techniques, and processes aimed at improving their critical thinking and communication skills, which ultimately will serve them well in both academic and professional environments. Additionally, students will examine elements of university culture and university policies with the aim of providing them with perspectives that can enhance their academic success and build their on-campus network. Ideal for transfer students and anyone looking to boost their academic performance.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROGRAM: College of General Studies

CGS 0093 - FROM CLASSROOM TO CAREER: ACADEMIC AND CAREER EXPLORATION 2

Minimum Credits: 1
Maximum Credits: 1
As the second course of a two course series on academic and professional development, this course asks students to further examine the ways that their academic plans and career goals align. Students will identify their current competencies and those they still need to acquire in order to succeed in identified careers. Building on their new understanding of their competencies and interests, students will develop strategies to reach their identified career goals, such as obtaining the internships, informational interviews, and job shadowing experiences necessary to attract prospective career opportunities and build their professional network. Ideal for career launchers and career changers, no prerequisites needed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

CGS 0094 - ENTREPRENEURIAL CONCEPTS AND PLANNING

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to assist students who are interested in starting a business by providing mentorship and realistic nurturing of their concepts. The college of general studies recognizes that entrepreneurship is a legitimate alternative to classical job searching. CGS students are uniquely qualified to be successful business leaders because of their maturity, well-rounded educational background and drive and initiative. This will be an online class, primarily taught using the blackboard system. Students will be required to not only prepare and submit relevant documents such as marketing plans and sales strategies on a weekly basis, but also to comment on submissions by fellow students. At the completion of this class, the successful student will have refined a business concept prior to developing a full-blown business plan.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CGS 0095 - CAPSTONE COURSE: IMPLEMENTING YOUR CAREER PLAN

Minimum Credits: 1
Maximum Credits: 1
This is primarily an on-line course, requiring weekly on-line participation, in addition to three in-person workshops. This course will provide students the opportunity to connect their academic competencies with their career goals. Students will utilize professional communication skills in order to effectively position themselves for appropriate career opportunities. Students will master career development techniques such as: practicing interviewing skills, writing professional documents, developing networking contacts, identifying job/graduate school opportunities and compiling a professional career plan, in order to conduct a well-organized job search or prepare for graduate school.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit
CGS 1124 - FIELD STUDY: NORTHERN IRELAND

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

CGS 1900 - CHOOSING YOUR PATH: INTERNSHIP SEMINAR

Minimum Credits: 1
Maximum Credits: 6
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

CGS 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Allows advanced students to pursue topics and research of special interest which are not otherwise available.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

CSD 1020 - NATURE OF LANGUAGE

Minimum Credits: 3
Maximum Credits: 3
This course provides an overview of linguistics and psycholinguistics including phonologic, morphologic, syntactic, semantic, and pragmatic aspects of linguistic theory and behavior. Topics may also include neurolinguistics, developmental psycholinguistics, and the relationship between cognition and language.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: PSY 0010

CSD 1021 - LANGUAGE DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
Students in this course become acquainted with current models and empirical evidence concerning the process of language acquisition.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CSD 1020 or LING 1000; PLAN: Communication Science (BA, BPH) or Not Candidate for Degree CDS

CSD 1022 - TRANSCRIPTION PHONETICS

Minimum Credits: 3
Maximum Credits: 3
The study of the phonemics of American English and of broad and narrow phonetic transcription, utilizing the international phonetic alphabet. Attention will also be paid to the transcription of abnormal speech patterns.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Communication Science (BA, BPH)

CSD 1023 - ANATOMY AND PHYSIOLOGY OF SPEECH

Minimum Credits: 3
Maximum Credits: 3
An overview of the anatomy and physiology of the system involved in speech production including respiration, phonation, articulation, resonation, and nervous system.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Communication Science (BA, BPH)

CSD 1024 - ANATOMY AND PHYSIOLOGY OF HEARING

Minimum Credits: 3
Maximum Credits: 3
Study of the anatomy of the outer and middle ears, the middle ear transformer action, and acoustic reflex. Review of cochlear anatomy and theories of the transducer function of the inner ear. Study of central auditory pathways and binatural hearing.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: CSD 1024

CSD 1025 - HEARING SCIENCE

Minimum Credits: 3
Maximum Credits: 3
Fundamental concepts in normal audition. Review of acoustics, anatomy, and physiology of auditory system, psychophysical methods and subjective correlates to auditory stimulus.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CSD 1024 and CSD 1029; PLAN: Communication Science (BA, BPH) or Not Candidate for Degree CDS

CSD 1026 - SPEECH SCIENCE

Minimum Credits: 3
Maximum Credits: 3
An introduction to speech physiology, acoustics, perception, models of speech production, research methodology and current topics in the area of speech science.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CSD 1023 and CSD 1027; PLAN: Communication Science (BA, BPH) or Not Candidate for Degree CDS

CSD 1027 - LAB IN ANAT/PHYSIOLOGY OF SPEECH

Minimum Credits: 1
Maximum Credits: 1
This is a one credit required experience for all students enrolled in the CSD 1023: Anatomy and physiology of speech. Includes opportunites to
review and enhance understanding of lecture material, utilizing additional drawings, anatomical models and actual specimens.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: 1023

**CSD 1028 - LAB IN HEARING SCIENCE**

Minimum Credits: 1  
Maximum Credits: 1  
This is a one credit required experience for all students enrolled in "Hearing Science".

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: CSD 1024 and 1029; CREQ: CSD 1025; PLAN: Communication Science (BA, BPH) or Not Candidate for Degree CDS

**CSD 1029 - LAB IN ANAT/PHYSIOLOGY OF HEARING**

Minimum Credits: 1  
Maximum Credits: 1  
This is a one credit required experience for all students enrolled in the "Anatomy and Physiology of Hearing" course (1024).

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: 1024

**CSD 1030 - LAB IN SPEECH SCIENCE**

Minimum Credits: 1  
Maximum Credits: 1  
An introduction to speech physiology, acoustics, perception, models of speech production, research methodology and current topics in the area of speech science.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Communication Science (BA,BPH)

**CSD 1099 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 3  
Provides advanced students an opportunity to explore in depth an area of particular interest to them. It is the student's responsibility to find a faculty member willing to undertake such a tutorial.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade

**CSD 1101 - INTRO TO CLINICAL PROCESSES**

Minimum Credits: 3  
Maximum Credits: 3  
This course overviews the clinical processes employed in the diagnosis and treatment of speech, language and hearing disorders. Videotaped observations of clinical sessions will be reviewed and discussed, with students preparing detailed observational reports.
CSD 1230 - INTRODUCTION TO SPEECH LANGUAGE PATHOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to introduce students to the field of communication disorders, by acquainting them with the major disorder types as well as the major activities conducted by speech-language pathologists.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

CSD 1231 - EVALUATION AND TREATMENT OF COMMUNICATION DISEASES

Minimum Credits: 3  
Maximum Credits: 3  
This course provides students with information concerning identification, assessment, and treatment of clients exhibiting various communication disorders.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Communication Science (BA, BPH)

CSD 1232 - INTRODUCTION TO AUDIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
A pre-professional course that introduces elements of the basic audiometric/impedance test battery, advanced tests of diagnostic utility, evaluation of special populations, and the role of the clinical audiologist in aural rehabilitation.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

CSD 1233 - INTRODUCTION TO RESEARCH

Minimum Credits: 3  
Maximum Credits: 3  
This course provides an introduction to research methods in speech, language, and hearing sciences and communicative disorders. Students will learn how to read and critique research articles more effectively. They will also learn to generate research questions and to develop strategies for collecting data and evaluating experimental effects.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Communication Science (BA, BPH)

CSD 1234 - WRIT PRAC FOR EVAL & TREATMENT

Minimum Credits: 1  
Maximum Credits: 1  
A one-hour recitation section will be held weekly that will be dedicated to developing writing skills. Students will be required to produce samples of writing in many formats (article summaries and reviews, diagnostic reports, progress reports, and research reports) to prepare them to be effective
communicators in the field of communication science and disorders. Students will be required to critique their own products as well as those of their peers.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PLAN: Communication Science (BA, BPH)

CSD 1902 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This course is designed to enable students to explore an area of particular interest in depth. The student(s) and instructor agree on the topic area, method of study, requirements and evaluation procedure at the outset of the course.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

CSD 1903 - USA IRELAND: SURVEY OF HEALTH, SOCIAL SERVICES, EDUCATION AND CULTURE

Minimum Credits: 2
Maximum Credits: 2
This a required course for students who have been offered a place in the summer SHRS multi-disciplinary study abroad program in Ireland, CSD 1904. In this seminar-based course, students will explore the history of Ireland and the political and economic structure of Northern Ireland and the Republic of Ireland. This will serve as a foundation for further study of the health, educational and social service policies of each country and a basis for comparison with the US. Students will also review the medical, rehabilitation and educational sites to be visited during the summer program and become familiar with the conditions and disorders of the individuals served at each of these facilities.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Satisfactory/No Credit

CSD 1904 - SHRS STUDY ABROAD IN IRELAND

Minimum Credits: 6
Maximum Credits: 6
This is an interdisciplinary study abroad opportunity offered through the department of communication science and disorders.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CSD 1903

CSD 1905 - SOCIAL AND HEALTH ISSUES IN EAST AFRICA

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

COMMRC 0300 - COMMUNICATION PROCESS

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to basic theories, models, and concepts in interpersonal, small group, organizational and intercultural communication.

Academic Career: Undergraduate
COMMERC 0310 - RHETORICAL PROCESS

Minimum Credits: 3
Maximum Credits: 3
This is an introductory course designed to give students a sense of the role rhetoric plays in the construction of our social, political, and cultural worlds, and to introduce students to traditional and contemporary approaches to the analysis of rhetorical discourse. Students will prepare a series of short performances for presentation in the recitation sections.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

COMMERC 0311 - RHETORICAL PROCESS HONORS RECITATION

Minimum Credits: 1
Maximum Credits: 1
The honors recitation section is an extension of the COMMERC rhetorical process course, with special emphasis on 1) the formulation of productive questions, 2) deliberate, informed invention, and 3) the conception of student-driven projects that leverage students' academic expertise and lived experience for the generation of collaborative analyses and solutions to social, political, economic, and cultural problems. In pursuing these goals, students will examine and, through their individual coursework, enact the dialectic of Aristotelian and sophistic understandings of rhetoric: the discernment of the means of persuasion available to them and the capturing of possibilities in opportune moments.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade

COMMERC 0320 - MASS COMMUNICATION PROCESS

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce students to the basic concepts of mass communication research and to the history and development of various media (TV., Radio, newspapers, magazines, etc.).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

COMMERC 0500 - ARGUMENT

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to fundamental principles of argument, and develops argumentative skills through practice analysis and criticism.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

COMMERC 0501 - ARGUMENT HONORS RECITATION

Minimum Credits: 1
Maximum Credits: 1
Students taking the three-credit COMMERC Argument 0500 course in fall term 2014 can enroll in this supplemental one-credit honors section that will meet separately for 75 minutes each week. The honors sidecar will provide high-achieving and motivated students the opportunity to explore class content in extra depth, through seminar-style discussions and assignments, such as public debate and advocacy projects, designed to cultivate and apply advanced argumentation skills and develop capacity for independent critical thinking. The one-credit sidecar is open to students with
honors course eligibility (3.25 GPA or instructor permission).

**Academic Career:** Undergraduate

**Course Component:** Credit Laboratory

**Grade Component:** Letter Grade

**COMMRC 0510 - DEBATE**

Minimum Credits: 3  
Maximum Credits: 3  
This course offers academic credit for preparation for, and participation in, intercollegiate debate.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**COMMRC 0520 - PUBLIC SPEAKING**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to help students develop increased skill in public speaking by means of theory and practice. This course covers research, organization, style, delivery, and criticism of informative, deliberative, and ceremonial speeches.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**COMMRC 0530 - INTERPERSONAL COMMUNICATION**

Minimum Credits: 3  
Maximum Credits: 3  
The purpose of this course is to introduce students to theories and models of human communication in the face-to-face communication context. Focus of learning is on skill development; lecture, discussion, and practice of communication skills are used to facilitate student learning.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**COMMRC 0540 - DISCUSSION**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to increase skills in critical thinking, decision making, and small group discussion. Students are introduced to theories of group process and practice step-by-step group problem solving related to contemporary issues.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**COMMRC 0550 - SPEECH COMPOSITION**

Minimum Credits: 3  
Maximum Credits: 3  
The course deals with the theory and practice of preparing manuscript speeches. Students will focus on several principles of speech composition, including stages of speech development, general analysis of the occasion, maintaining attention, sources of persuasion through argument and qualities of effective style.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
COMMRC 1070 - UNDERGRADUATE RESEARCH PROSEMINAR

Minimum Credits: 3  
Maximum Credits: 3  
The Undergraduate research experience opens horizons for students to envision pursuing scholarship as a profession. What does it mean to be a professional scholar? How have such conceptions changed through time, and what might the future hold for those who aspire to a 'life of the mind'? The academic research profession increasingly calls on scholars to explain their work to researchers from other fields, frame their research findings as useful contributions to society, and interact with public audiences. Hence a communication-based perspective provides a useful point of departure for students from the natural sciences, social sciences, and humanities alike to explore these opportunities and challenges in a collaborative, interdisciplinary seminar setting.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

COMMRC 1101 - EVIDENCE

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the nature and structure of evidence and reason-giving in everyday discourse. Students develop critical skills in evaluating argument and reasoning by examining the evidential requirements of argument in specific rhetorical contexts; science, philosophy, and politics.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

COMMRC 1102 - ORGANIZATIONAL COMMUNICATION

Minimum Credits: 3  
Maximum Credits: 3  
Students in this course are provided with an overview of the relationship between communication and organizing processes. The course emphasizes theories, principles, and concepts of organizational communication. Students learn to analyze the communication which occurs in organizations to recognize sources of communication breakdown and develop an awareness of strategies for prevention and/or resolution of communication on breakdown.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (COMMRC 0300 or 0030 or 0100 or 0101 or 7300) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1103 - RHETORIC AND CULTURE

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the constitutive role that rhetoric plays in the formation of culture. Cultural texts and events will be examined both as reflecting and signifying practices. The course focuses on rhetoric's relation to ideology, power, and desire, as well as to class formations and sexual divisions. Selecting two of the above perspectives, students will examine how cultural practices constitute and are constituted by rhetoric.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (COMMRC 0310 or 0320 or 0081 or COMM 0102) and [Engcmp 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1104 - POLITICAL COMMUNICATION
Minimum Credits: 3
Maximum Credits: 3
This course examines the way methods of symbol use are employed in the political arena. Persuasive techniques will be studied as they are used in public debates over issues of policy. Rhetorical criticism will be the primary mode of analysis.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0310 or 0320 or 0081 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1105 - TELEVISION AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
This course explores the relationship between television and society. It familiarizes students with the history of the broadcast industry along with related legal, political, and economic issues. The course focuses on analyzing various television programs as constitutive of and constituted by social relations (class, gender, and race).
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0320 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1106 - SMALL GROUP COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
Principles of small group communication are examined in this course. In particular, the examination will reveal the principles of group entry, group formation, group cohesiveness, group verbal and nonverbal message exchanges, group leadership, group problem solving and discussion, and group performance and satisfaction. Individual beliefs, attitudes and behaviors will be compared and contrasted with group beliefs, attitudes and behaviors.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0300 or 0030 or 0100 or 7300 or COMM 0101) and [ENGCMP 200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1109 - NONVERBAL COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to examine the ways we communicate nonverbally. By nonverbal communication is meant that form of communication wherein messages are sent by virtue of an agent's physical characteristics, adornment, eye behavior, design and selection of environment, spatial relationships, utilization of time, touching behavior, body movements, the choice of objects to fill space, and vocal behavior. Principles and applications of nonverbal communication are discussed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0300 or 0030 or 0100 or 7300 or COMM 0101) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1110 - THEORIES OF INTERPERSONAL COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to introduce students to the ways in which researchers conceptualize and study interpersonal communication. Emphasis is upon the various issues which different conceptualizations raise in the study of human relationships. Students will have the opportunity to test the relevancy of insights each conceptualization provides for understanding the communication practices found in natural interactions and personal experience.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COMMRC 0300 or 0030 or 0100 or 7300 or COMM 0101) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

**COMMRC 1111 - THEORIES OF PERSUASION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course surveys theories of persuasion that have been articulated during the twentieth century. It seeks to compare and contrast research about how the spoken word and the visual image influence public belief and action.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COMMRC 0310 or 0320 or 0081 or COMM 0102) and (COMMRC 0520 or 0052 or COMM 0104) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

**COMMRC 1112 - THEORIES OF RHETORIC**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The purpose of this course is to introduce students to major theories of rhetoric ranging from the sophists to some modern theorists.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COMMRC 0310 or 0081) and (COMMRC 0520 or 0052 or COMM 0104) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

**COMMRC 1114 - FREEDOM OF SPEECH AND PRESS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The purpose of the course is to provide students with a critical understanding of the historical themes and contemporary issues involved in the debate over free speech. This course examines philosophies of expression from Plato through the most recent supreme court decisions. Study focuses on cases, major doctrines, and competing interpretations of the first amendment to explore the freedoms and limits of individual expression and regulation of communication industries.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COMMRC 0310 or 0320 or 0081 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

**COMMRC 1115 - AFRICAN AMERICAN RHETORIC**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The purposes of this course are: a historical-critical re view of scholarship in African American rhetoric; and a theoretical-conceptual framework for the study of African American rhetoric. This course places considerable emphasis on the African roots of African American rhetoric, but the ultimate concern is with African Americans' behavior. The course covers consequences of African and European inter actions in America, factors that forged
the distinctive aspects of African American rhetoric. The effects of culture, racism, colonialism, and social class on communication.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

COMMRC 1116 - RHETORIC OF THE AMERICAN COUNTERCULTURE

Minimum Credits: 3
Maximum Credits: 3
This course is concerned with social protest and the modern conception of the outsider, people and groups who choose to separate themselves, or are unwillingly separated, philosophically and ideologically from the society within which they live. One of the most recognizable examples of living the life of the outsider was embodied in the beat generation of the 1940's and 1950's, who embraced self-indulgence as well as literary themes of disenchantment and disengagement. A second example is the counterculture of the 1960's, the hippie generation, who tended to express themselves more in mass countercultural themes like student anti-war activism, popular, socially activist music, and film. Requirements include: discussion participation, 3 short papers (3 pages), 3 longer papers (8 pages), and one class presentation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

COMMRC 1117 - 21ST CENTURY PUBLIC ARGUMENT

Minimum Credits: 3
Maximum Credits: 3
The course examines selected moments in American public rhetoric in the 21st century by examining artifacts, speakers and social movements that characterize the U.S. During this period.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0310 or 0320 or 0081 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1119 - PRESIDENTIAL RHETORIC 2

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the rhetorical analysis of presidential addresses as well the communication styles and methods of U.S. Presidents from Dwight Eisenhower through and including George W. Bush it is important to understand that while the primary focus of the course is on the analysis of the political communication style of the presidents, in order to be able to analyze and evaluate the complex nature of both style and content of the addresses and comments, it is necessary to have an awareness of the background, history and events of the day as each may have impacted and/or precipitated the addresses/comments. Thus, an overview of those critical areas as well as basic communication theory and audience analysis will be an integral part of the course. Course components will include two written projects, speech analyses, one of which will serve as the basis for an individual oral presentation; one group project, a midterm and a final exam.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0310 or 0320 or 0081 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1120 - RHETORIC OF COLD WAR

Minimum Credits: 3
Maximum Credits: 3
Course examines selected moments in rhetorical aspects of the cold war with a focus on language, perceptions, arguments and the formation of public policy.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (COMMRC 0310 or 0320 or 0081 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1121 - HISTORY OF MASS MEDIA

Minimum Credits: 3  
Maximum Credits: 3  
This course provides an in-depth historical examination of U.S. Media (newspapers, magazines, radio, television and/or advertising). Emphasis is placed on the media's technological, political and cultural impact. Topics may vary depending on the particular historical period to be examined.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (COMMRC 0320 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1122 - MEDIA CRITICISM

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to introduce students to major trends in media criticism (e.g., Psychoanalysis, genre analysis, feminist theory, and cultural studies). Course readings and discussions will focus primarily on television texts.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (COMMRC 0320 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]; MIN GRADE 'C' for all listed courses

COMMRC 1123 - RHETORICAL CRITICISM

Minimum Credits: 3  
Maximum Credits: 3  
The course on rhetorical criticism focuses on the history, methods, and practice of rhetorical criticism in American universities during the twentieth century. The course has been designed to help the student become acquainted with contemporary methods of rhetorical criticism through a combination of lectures, discussions, and practical applications. In addition, the course has been designed to help the student improve his or her writing abilities.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (COMMRC 0310 or 0520 or 0052 or 0081 or COMM 0104) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1125 - MEDIA THEORY

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the major theoretical approaches in contemporary media studies. Emphasis is placed on understanding the basic tenets of these theoretical models and how they are applied in analyses of media texts.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
**Course Requirements:** PREQ: (COMMRC 0320 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

**COMMRC 1126 - MEDIA AND CONSUMER CULTURE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will examine consumer culture in the twentieth and twenty-first century U.S. It examines advertising, the rise of the brand, and their roles in the commercialization of mass media. Of particular importance will be the role that race, class, and gender have played in shaping consumer culture (and vice versa), as well as the significance of the shift from a society based on an understanding of citizens based on democratic practices to one based on consumerist practices.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COMMRC 0320 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]; MIN GRADE 'C' for all listed courses

**COMMRC 1143 - KNOWLEDGE, POWER, AND DESIRE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines issues of power, desire and knowledge in the work of Michel Foucault, and contrasts them with ideas of knowledge production in contemporary Anglo-American philosophy of science.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COMMRC 0310 or 0081) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

**COMMRC 1147 - THE RHETORIC OF SCIENCE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course examines how scientists persuade and dissuade each other and broader publics in the creation and dissemination of knowledge. It addresses such topics as: rhetoric and the production of scientific findings, communication of scientific knowledge to various publics, persuasive influences on funding decisions, how the public might better understand or influence scientific processes, and the intersection of science and public policy. These will be studied in the context of major science-related controversies of the recent past.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COMMRC 0310 or 0081) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

**COMMRC 1148 - RHETORIC AND HUMAN RIGHTS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course focuses upon discourse about human rights--both the affirmation and the denial of human rights. The course also examines the practice of rhetorical criticism.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COMMRC 0310 or 0081) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]
COMMRC 1149 - ENVIRONMENTAL RHETORIC

Minimum Credits: 3
Maximum Credits: 3
The primary purpose of this course is to introduce upper division undergraduates to some of the most important rhetorical resources utilized by various participants in contemporary American environmental controversies. The first unit of the course is devoted to various historical and contemporary cross-cultural conceptions of the natural world and the place of humans within what to those in our culture is called the natural 'environment.' In this unit we compare briefly European, Asian and native-American conceptions and the various rhetorics used in each in the attempt to persuade those with differing views. The second unit quickly reviews the development of American environmental rhetorics from the early European settlement of the new world, through the colonial period, the early national era and into the late 19th century, by which time many of the signal concepts and rhetorical resources which continue to inform 21st century American discourse on wilderness, nature, environment and ecology were first elaborated. Unit three examines some of the most significant and contention environmental disputes of the 20th century; including wilderness preservation, the human causes of the great 'dust bowl' devastation of farmland in the 1930s, the sudden relevance of the old science of 'ecology,' the huge influence of Rachel Carson's rhetorical masterpiece, silent spring, exposing the dangers of wide scale use of the pesticide DDT, and the growth of new movements against nuclear, chemical, and biological contamination as well as air, water, oceanic, solid waste, and many other forms of pollution, including even the at first ridiculed dangers of noise and light pollution. Unit four then looks at the environmental movement as it becomes truly global, beginning symbolically with the first 'earth day' activities, protests and teach-ins in 1970, which have continued annually to this day. Unit five will look at the acrimonious 1980s dispute between the new 'deep ecology' movement and the more mainstream environmental lobbying organizations like the sierra club, the nature conservancy etc. which focus primarily on lobbying congress for environmental reforms, rather than advocating a complete revolution in the way each individual human lives. Unit six will then treat some of the many enormous new environmental challenges of the 21st century, from still unrestrained global warming, to ozone depletion, to the depletion of fish stocks, to deforestation and desertification, to increasing human population, to widespread species extinctions, to the depletion of natural resources, from oil, to arable land, and even potable water, and so forth. Students should leave the course with a rigorous understanding of where contemporary environmental rhetorical resources come from and how they continue to operate in all manner of contemporary environmental and ecological controversies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

COMMRC 1151 - BRITISH BROADCASTING TODAY

Minimum Credits: 3
Maximum Credits: 3
To examine the variety and range of programme genres broad cast on British TV and radio. Reference will be made to the philosophy and industry structures which nurture them. New developments in technology, regulation and international markets will be considered as will scheduling issues. The cultural underpinnings of the system will be analyzed and internal industry and political debates will be addressed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

COMMRC 1156 - ETHICS AND MEDIA

Minimum Credits: 3
Maximum Credits: 3
This course will address the principal ethical issues facing print and broadcast journalism. It will consider the practical dilemmas reporters and editors have to deal with and relate them to a moral framework. The focus will be on the real time arguments that arise almost daily in media coverage of matters of public controversy - crime, war, privacy and the like. The course objectives are to learn how to evaluate the performance of the media and to help students develop their own ethical philosophy. Problems of regulation and codes of practice will also be examined. Students will be able to take advantage of London's global importance as a media hub and the distinctive media culture of the UK through a program of case studies, visits and guest lectures by practitioners.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

COMMRC 1160 - VISUAL RHETORIC
Minimum Credits: 3
Maximum Credits: 3
This course centers on research concerning visual rhetoric. It will concentrate primarily on a range of interpretive and critical approaches for studying instances of visual communication. Students will write three papers demonstrating their ability to analyze and interpret visual texts. The method of instruction includes lecture, discussion, film and practice workshops. Considerations of gender, sex, race, sexuality, and class will be interwoven throughout the course materials and discussions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)] and (COMMRC 0310 or 0081)

COMMRC 1161 - COMMUNICATION ETHICS

Minimum Credits: 3
Maximum Credits: 3
Contemporary society offers a wide variety of topics for ethical consideration: deception, lying, fidelity in relationships, hate speech, harassment, privacy, intellectual property, pornography and many others. This class examines the ethical dimensions of communication through the prism of case studies. Students are introduced to traditional forms of ethical reasoning as well as emerging concerns raised by the internet and digital media. One major question that the course addresses is the following: do the internet and new information technologies represent qualitatively new ethical challenges or are these versions of traditional ethical dilemmas? The bulk of class time uses discussion and case studies to emphasize the practice of ethical deliberation and the ability to reason about ethical issues and problems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

COMMRC 1170 - CROSS CULTURAL COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
This course will increase the understanding of basic concepts and principles regarding communication between people from different racial, ethnic, and cultural backgrounds within Australia, including aboriginal, and immigrant populations. The course will use theory and research in the area of intercultural communication, and will help you develop this knowledge in understanding and improving human interaction in both the study abroad environment and international contexts. It will develop effective intercultural communication skills for learning abroad in Australia, and focus on a study of the social, structural and historical dimensions of relations between and among racial, ethnic and gender groups in contemporary Australian society. This course is designed to increase student's awareness and appreciation for the complexity of intercultural communication skills in everyday situations. It offers a critical perspective on current theory and research in intercultural communication. The primary objective of the course is to develop cultural relativist attitude.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

COMMRC 1175 - COMMUNICATION AND GLOBAL COMPETENCE

Minimum Credits: 3
Maximum Credits: 3
With the rise of global mobility and communication, encountering people from a variety of cultures, and the need for effective communication, is commonplace. This course explores the interaction between culture and communication and introduces students to the knowledge and skills necessary to attain global competence. In addition, this course introduces the construct of global competence; creates the opportunity to analyze and evaluate how our own cultural identity influences communication with others; engages interaction with the host culture; and prepares the students with knowledge and skills to be effective and ethical intercultural communicators. This class is held in Dublin and will include lectures, class discussions, simulations, interactive examples, case studies, media presentations cultural encounters, and field experiences.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
COMMRC 1520 - ADVANCED PUBLIC SPEAKING

Minimum Credits: 3
Maximum Credits: 3
This course teaches students advanced skills needed in the preparation, delivery, and evaluation of formal public address. Advanced public speaking extends what was learned in the introductory public speaking course by examining more advanced theories and strategies of public address, critically evaluating public discourse in a variety of settings and sharpening the extemporaneous delivery skills of the student.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

COMMRC 1710 - SENIOR THESIS IN COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
Research on a special project in rhetoric, communication, or media. The study will be embodied in a thesis supervised by the instructor and approved by additional departmental faculty.
Academic Career: Undergraduate
Course Component: Thesis Research
Grade Component: Satisfactory/No Credit

COMMRC 1730 - SPECIAL TOPICS IN COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
This course covers a specialized topic in communication. Topics vary every semester.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0300 or 0030 or 0100 or 7300 or COMM 0101) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1731 - SPECIAL TOPICS IN RHETORIC

Minimum Credits: 3
Maximum Credits: 3
This course covers a specialized topic in rhetoric. Topics vary every semester.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0310 or 0081) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]

COMMRC 1732 - SPECIAL TOPICS IN MASS COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
This course covers a specialized topic in mass communication. Topics vary every semester.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COMMRC 0320 or COMM 0102) and [ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102)]
COMMRC 1900 - COMMUNICATION INTERNSHIP

Minimum Credits: 1
Maximum Credits: 3
Internships provide practical work experience related to the student's course of study.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

COMMRC 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
Independent study is a program of academic reading and research taken under the direction of a faculty sponsor.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

COMMRC 1904 - UNDERGRADUATE TEACHING EXPERIENCE IN COMMUNICATION

Minimum Credits: 1
Maximum Credits: 3
Provides an opportunity for qualified Undergraduate students, under the guidance of a classroom teacher, to have a first-hand experience with peer mentoring and classroom instruction as a UTA. Participation is by instructor invitation only.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Satisfactory/No Credit

COMMRC 1905 - DIRECTED RESEARCH

Minimum Credits: 1
Maximum Credits: 3
A course for upper level students who have completed at least 45 credits (12 credits in COMMRC) who wish to conduct field research in communication. The course is an opportunity for students to create a semester-long self-designed project resulting in a body of advanced work. Regular progress reports and critiques are scheduled with the instructor individually.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

COE 0031 - LINEAR CIRCUITS AND SYSTEMS 1

Minimum Credits: 4
Maximum Credits: 4
The analysis of linear circuits. Electric variables and circuit elements; kirchoff's and ohm's law; mesh and node equations; thevenin and norton equivalent circuits; first and second-order circuits; time domain analysis.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (MATH 00150 or 0230 or 0231 or 0235) and (PHYS 0152 or 0175 or 0202 or 0476); PLAN: Computer Engineering (BSE)

COE 0035 - LINEAR CIRCUITS AND SYSTEMS LAB FOR TRANSFERS STUDENTS
Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: (MATH 0150 or 0230 or 0231 or 0235) and (PHYS 0152 or 0175 or 0202 or 0476); PLAN: Computer Engineering (BSE)

**COE 0041 - LINEAR CIRCUITS AND SYSTEMS 2**

Minimum Credits: 3
Maximum Credits: 3
Sinusoidal steady-state analysis, network functions, real and reactive power, three-phase circuits, laplace transform method, two-port networks, and fourier series.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ECE 0031 or COE 0031; PROG: Swanson School of Engineering

**COE 0132 - DIGITAL LOGIC**

Minimum Credits: 3
Maximum Credits: 3
Introduction to digital systems, boolean algebra, minimization of logic functions, combinational and sequential circuit design.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (MATH 00150 or 0230 or 0231 or 0235) and (PHYS 0152 or 0175 or 0202 or 0476); PLAN: Computer Engineering (BSE)

**COE 0147 - COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE**

Minimum Credits: 3
Maximum Credits: 3
This course provides a detailed introduction into the basics of computer design common to most computer architectures including topics of digital computer data representation, arithmetic and logic units, instruction formats, control, microprocessor architecture, and memory systems. This course includes a heavy focus on MIPS assembly language and its interaction with a RISC computer architecture. This course satisfies the prerequisite to CS/COE 1541 computer architecture.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: COE 0132 or ECE 0132; CREQ: COE 0445 or CS 0445; PLAN: Computer Engineering (BSE)

**COE 0257 - ANALYSIS AND DESIGN OF ELECTRONIC CIRCUITS**

Minimum Credits: 3
Maximum Credits: 3
Diode circuits, power supply design; analysis and design of bipolar junction transistor and field effect transistor amplifiers. Bias stability analysis, power amplifiers. Ideal operational amplifiers. CMOS inverters.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: COE 0031 or ECE 0031 and PLAN:Computer Engineering
COE 0401 - INTERMEDIATE PROGRAMMING USING JAVA

Minimum Credits: 4
Maximum Credits: 4
This course is a rigorous introduction to the fundamental concepts and techniques of computer programming using the java programming language. This is a first course for students who intend to major in computer science or computer engineering.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Computer Engineering

COE 0441 - DISCRETE STRUCTURES FOR COMPUTER SCIENCE

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to understand and use abstract discrete structures that are the backbones of computer science. In particular, this class is meant to introduce logic, proofs, sets, relations, functions, counting, and probability, with an emphasis on applications in computer science.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0031; PROG: Swanson School of Engineering

COE 0445 - DATA STRUCTURES

Minimum Credits: 3
Maximum Credits: 3
This course emphasizes the study of the basic data structures of computer science (stacks, queues, trees, lists) and their implementations using the java language. Included in this study are programming techniques which use recursion, reference variables, and dynamic memory allocation. Students in this course are also introduced to various searching and sorting methods and are expected to develop an intuitive understanding of the complexity of these algorithms.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: COE 0401 or CS 0401; PLAN: Computer Engineering

COE 0447 - COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to study the components of computing systems common to most computer architectures. In particular, this class is meant to introduce data representation, types of processors, memory types, and hierarchy, and device drivers. The students will learn mips assembly language, the design of arithmetic and logic units, and basic designs for risc processors.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: COE 0445 or CS 0445; PLAN: Computer Engineering

COE 0449 - INTRODUCTION TO SYSTEMS SOFTWARE

Minimum Credits: 3
Maximum Credits: 3
This course covers topics related to the interface of hardware and software. It covers device interface and hardware synchronization at the lowest level of the operating system, the linkage of operating system services to application software, and the fundamental mechanisms for computer communications.
COE 0501 - DIGITAL SYSTEMS LABORATORY

Minimum Credits: 3
Maximum Credits: 3
This course and laboratory introduces students to the basic concepts of digital circuits, simulation and instrumentation, systems composed of discrete devices, logic gates, combinatorial and sequential circuits are designed, simulated, built and tested.

COE 1161 - EMBEDDED COMPUTER SYS DESIGN 2

Minimum Credits: 3
Maximum Credits: 3
Organized as a full term project carried out by student design groups. A complex embedded system will be designed, implemented and tested using Altera and other cad tools. Grade will be based on project reviews and the final project report. Proper design process will be emphasized.

COE 1170 - SPECIAL TOPICS: COMPUTER

Minimum Credits: 1
Maximum Credits: 1
An undergraduate course dealing with special topics of current interest in computers.

COE 1186 - SOFTWARE ENGINEERING

Minimum Credits: 4
Maximum Credits: 4
This course and laboratory introduces classical and object-oriented software engineering. Software requirements, specification, object-oriented analysis, design, implementation, integration, and maintenance are covered. Each of these phases is examined on a practical level through a semester long, formal design project that involves the creation of a java-based internet application. Additional java-related topics are taught, including java applets, custom networking, remote database access, SQL, and multimedia extensions.

COE 1188 - CYBER-PHYSICAL SYSTEMS
The arrival of the internet-of-things (IOT) has brought about a world where the everyday objects we interact with, ranging from health monitoring devices to appliances and automobiles, are embedded with intelligence, the ability to communicate over a network and act on information stored in the "cloud". In this intensive laboratory course, students, by way of a series of projects, follow the journey data takes from a sensor, to a microcontroller, through a network and then to the cloud (and back!). Along the way students are exposed to a broad range of electrical and computer engineering topics including electronic design, embedded programming, digital signal processing, networking and information theory, wireless communications, antenna theory and big data analytics.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (COE 0501 or ECE 0501) and (COE 0147 or COE 0447 or ECE 0142) and (COE 0401 or CS 0401); PLAN: Computer Engineering

**COE 1192 - INTRODUCTION TO VLSI DESIGN**

Minimum Credits: 4  
Maximum Credits: 4  
Introduction to the concepts and techniques of modern integrated circuit design. Use of Computer Aided Design (CAD) tools for circuit design and simulation. Senior design course. Includes a laboratory.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: ECE 0142 or (COE 0142 or 0447) or CS 0447; PROG: Swanson School of Engineering

**COE 1193 - ADVANCED VLSI DESIGN**

Minimum Credits: 3  
Maximum Credits: 3  
This course is organized as a full semester project in conjunction with a small amount of lecture material on advanced CMOS digital design techniques, as well as the group design process itself. Students form groups of 3 to 5 per group that design and implement different VLSI projects which are then fabricated by MOSIS and returned for testing. Focus is on teamwork with frequent oral/written reports.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

**COE 1501 - ALGORITHM IMPLEMENTATION**

Minimum Credits: 3  
Maximum Credits: 3  
This course covers a broad range of the most commonly used algorithms: some examples include algorithms for sorting, searching, encryption, graph searching, pattern matching, geometric intersection, compression, and local search. The students will implement and test several algorithms. The course is programming-intensive.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (COE 0132 or ECE 0132) and (COE 0445 or CS 0445); PLAN: Computer Engineering

**COE 1502 - ADVANCED DIGITAL DESIGN CONCEPTS**

Minimum Credits: 3  
Maximum Credits: 3  
This course and laboratory builds on the student's knowledge of digital design, computer architecture principles, and assembly language. It covers
both theoretical and practical considerations in the design of modern computing systems using computer aided design tools and programmable logic devices.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: COE 0501 or ECE 0501; CREQ: COE 1541 or CS 1541; PLAN: Computer Engineering (BSE)

COE 1520 - PROGRAMMING LANGUAGES FOR WEB APPLICATIONS

Minimum Credits: 3
Maximum Credits: 3
Various programming paradigms will be studied using java and scripting languages. The use of java in programming web based applications, network applications, and the use of the extensive java libraries will be studied. The programming paradigm of building software by gluing components will be explored through the use of scripting languages such as PERL and JavaScript. Applications include developing GUIs and internet programming.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: COE 0445 or CS 0445; PLAN: Computer Engineering (BSE)

COE 1530 - SOFTWARE ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to provide a general survey of software engineering. Some of the topics covered include: project planning and management, design techniques, verification and validation, and software maintenance. Particular emphasis is on a group project in which a group of students implement a system from its specification.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: COE 0445 or CS 0445; PLAN: Computer Engineering (BSE)

COE 1541 - INTRODUCTION TO COMPUTER ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
Examination of computer architecture and hardware system organization. Topics include: CPU organization, sequential and microprogrammed control, instruction set implementation, memory organizations, input/output structure, peripherals and computer communications.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COE or 0147 or 0447 or CS 0447) and (COE 0449 or CS 0449); PROG: Computer Engineering (BSE)

COE 1550 - INTRODUCTION TO OPERATING SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
An introduction to basic concepts of operating systems common to most computer systems, which interfaces the machine with upper-level programs. This course will introduce processes as processing unit, process management, concurrency, communication, memory management and protection, and file systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COE 0142 or 0147 or 0447 or ECE 0142 or CS 0447) and (COE 0449 or CS 0449); PLAN: Computer Engineering (BSE)

COE 1622 - INTRODUCTION TO COMPILER DESIGN

Minimum Credits: 3
Maximum Credits: 3
This course will introduce the basic concepts of compiler design and implementation. Topics include lexical analysis, various types of parsers, intermediate and object code generation and code optimization. The material will be presented from an implementation point of view rather than a formal approach. The impact of language design on compilers will also be examined.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COE 0142 or ECE 0142 or COE 0447 or CS 0447 or COE 0147) and (COE 0445 or CS 0445); PLAN: Computer Engineering (BSE)

COE 1631 - SOFTWARE DESIGN METHODOLOGY

Minimum Credits: 3
Maximum Credits: 3
Construction of large computerized systems proceeds through the stages of requirements analysis, specification, and implementation. This course deals with requirements analysis and specification, in particular, methodologies for improving the reliability of specifications (executable specifications and system phototypes).
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COE 0132 or ECE 0132) and (COE 0445 or CS 0445); PLAN: Computer Engineering (BSE)

COE 1651 - ADVANCED SYSTEMS SOFTWARE

Minimum Credits: 3
Maximum Credits: 3
To discuss in depth some advanced features of fundamental importance in the design of operating systems. The subjects discussed include interprocess communication, real-time scheduling, advanced file systems, security and protection mechanisms. The objective of the course is to provide an awareness of the known solutions to these problems and to the limitations of these solutions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (COE 0132 or ECE 0132) and (COE 0445 or CS 0445); PLAN: Computer Engineering (BSE)

COE 1885 - DEPARTMENTAL SEMINAR

Minimum Credits: 0
Maximum Credits: 0
Seminars are designed to acquaint the student with aspects of engineering that are not normally encountered in classes and school activities and include a wide range of topics such as the significance of engineering as a profession, ethical problems in engineering, and skills required for a successful engineering career.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

COE 1896 - SENIOR DESIGN PROJECT
Minimum Credits: 3
Maximum Credits: 3
A full-term engineering project involving definition, literature search, prototype design, and construction, with written and oral reviews. Senior
design course.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: (COE 0257 or ECE 0257) or (COE 0041 or ECE 0041) and (COE 0445 or CS 0445); PLAN: Computer Engineering
(BSE)

COE 1898 - ENGINEERING PROJECT

Minimum Credits: 1
Maximum Credits: 3
An investigation of an approved engineering subject under the supervision of a faculty monitor. Must be approved in advance by the faculty monitor
and the department chair.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

CS 0004 - INTRODUCTION TO COMPUTER PROGRAMMING-BASIC

Minimum Credits: 3
Maximum Credits: 3
This is a first course in computer science. It is designed to be of special interest to students majoring in one of the social sciences or humanities.
Objectives of this course include use of the computer in an interactive environment; problem analysis and the development of algorithms; learning
the basic language; designing; coding; and documenting programs using techniques of good programming style.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CS 0007 - INTRODUCTION TO COMPUTER PROGRAMMING

Minimum Credits: 3
Maximum Credits: 3
This is a first course in computer science programming. It is recommended for those students intending to major in computer science who do not
have the required background for CS 0401. It may also be of interest to students majoring in one of the social sciences or humanities. The focus of the
course is on problem analysis and the development of algorithms and computer programs in a modern high-level language.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CS 0008 - INTRODUCTION TO COMPUTER PROGRAMMING WITH PYTHON

Minimum Credits: 3
Maximum Credits: 3
This is course is designed as a first course in computer science programming. It is recommended for those students majoring in one of the natural
sciences, social sciences, or humanities who wish to learn the fundamentals of programming. It is also useful to students intending to major in
computer science who do not have the required background for CS 0401. The focus of this course is on problem analysis, the development of
algorithms and computer programs in python. Instruction will be provided to students interested in taking CS 401 in converting python programs to
Java.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
CS 0090 - SUSTAINABILITY AND COMPUTING

Minimum Credits: 3
Maximum Credits: 3
What is the environmental impact of websites such as Facebook or Amazon? How is society affected by throwing away old computers? The purpose of this course is to introduce the intersection of computers and society. Sustainability will be used as a concept to bridge the tradeoffs between technological and ecological forces. Topics include but are not limited to: energy production, e-books, telecommuting and e-waste. No computer programming or math background required.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

CS 0131 - SOFTWARE FOR PERSONAL COMPUTING

Minimum Credits: 3
Maximum Credits: 3
An intermediate-level course in computer science for students majoring in areas other than computer science. Objectives include a non-technical study of the windows NT operating system; development of applications using software selected from the principal areas of applications for personal computing. These include word-processing (MS Word), spreadsheets (MS Excel), and relational databases (MS Access).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CS 0134 - WEB SITE DESIGN AND DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
This course will provide a basic understanding of the methods and techniques of developing a simple to moderately complex web site. Using the current standard web page language, students will be instructed on creating and maintaining a simple web site. After the foundation language has been established, the aid of an internet editor will be introduced. A second web-based language will be included to further enhance the web sites.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CS 0155 - DATA WITCHCRAFT

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to data science, designed as a first course in computer science, for non-CS majors and CS minors within the honors college, aiming to introduce students to basic data management technologies and data analytics skills. The course will consist of about 1/3 of introduction to computer programming, 1/3 of introduction to data management technologies, and 1/3 of introduction to data analytics. The course will adopt the point of view of a user of data (e.g. who is just combining data and analyzing it using tools) and not a provider of data (e.g. who would be implementing a database-driven web site), as is typically the case for related courses for CS majors.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CS 0334 - INTERMEDIATE WEB SITE DESIGN AND DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
The course will consist of advanced implementations of both markup as well as scripting languages. In addition, students will be introduced to a graphical interface application that will allow them to explore concepts of server side web development. A reflective programming language and database application will be used to introduce the server side web development concepts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CS 0007 or 0134 or 0401 or INFSCI 0017 (Min Grade 'C' or Transfer)

**CS 0401 - INTERMEDIATE PROGRAMMING USING JAVA**

Minimum Credits: 4
Maximum Credits: 4
This course is a rigorous introduction to the fundamental concepts and techniques of computer programming using the java programming language. This is a first course for students who intend to major in computer science.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 0007 or 0134 or 0401 or INFSCI 0017 (Min Grade 'C' or Transfer)

**CS 0441 - DISCRETE STRUCTURES FOR CS**

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to understand and use (abstract) discrete structures that are backbones of computer science. In particular, this class is meant to introduce logic, proofs, sets, relations, functions, counting, and probability, with an emphasis on applications in computer science.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: MATH 0220 or 0230 or 0235 (Min Grade 'C' or Transfer) or (Plan: CS-MN or CSCI-MN and MATH 0120)

**CS 0445 - DATA STRUCTURES**

Minimum Credits: 3
Maximum Credits: 3
This course emphasizes the study of the basic data structures of computer science (stacks, queues, trees, lists) and their implementations using the java language included in this study are programming techniques which use recursion, reference variables, and dynamic memory allocation. Students in this course are also introduced to various searching and sorting methods and also expected to develop an intuitive understanding of the complexity of these algorithms.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 0401 (MIN GRADE 'C' or Transfer)

**CS 0447 - COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE**

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to study the components of computing systems common to most computer architectures. In particular, this class is meant to introduce data representation, types of processors, memory types and hierarchy, and device drivers. The students will learn MIPS assembly language, the design of arithmetic and logic units, and basic designs for RISC processors.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: CS 0445 (Min Grade 'C' or Transfer)

**CS 0449 - INTRODUCTION TO SYSTEMS SOFTWARE**
Minimum Credits: 3
Maximum Credits: 3
This course covers topics related to the interface of hardware and software. It covers device interfaces and hardware synchronization at the lowest level of the operating system, the linkage of operating system services to application software, and the fundamental mechanisms for computer communications.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 0445 or CS 0455 (Min Grade 'C' or Transfer); CREQ: CS 0447 or CS 0456

CS 0590 - SOCIAL IMPLICATIONS OF COMPUTING TECHNOLOGY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 0002 or 0003 or 0004 or 0007 or 0008 or 0015 or 0101 or 0401 or COE 0401 (Min Grade 'C' or Transfer for All Listed Courses)

CS 0699 - SPECIAL TOPICS IN COMPUTER SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce the student to computer security terminology, techniques and controls with a data centric approach to securing information. It is meant to be an introductory course and will focus on breadth instead of depth with respect to topics such as risk and security controls for network, host, web, database, software security, CANbus, SCADA, cloud. Introduction to malware analysis, forensics, cryptography, and threat intelligence in the enterprise is also covered. Students will also perform basic security assessments using various network and host security tools.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 0401 or COE 0401 or CS 0004 or 0007 or 0008 (Min Grade 'C' or Transfer for All Listed Courses)

CS 1501 - ALGORITHM IMPLEMENTATION

Minimum Credits: 3
Maximum Credits: 3
The course covers a broad range of the most commonly used algorithms: some examples include algorithms for sorting, searching, encryption, compression, and local search. The students will implement and test several algorithms. The course is programming intensive.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS (0441 and 0445) or (0406 and 0455); (MIN GRADE 'C' or Transfer FOR ALL COURSES LISTED)

CS 1502 - FORMAL METHODS IN COMPUTER SCIENCE

Minimum Credits: 3
Maximum Credits: 3
The course is an introduction to the theory of information and computation as a physical phenomenon. The course covers standard formalizations of computational concepts and proofs of noteworthy implications of these formalizations. Typical topics include: finite automata, computability, reducibility, and complexity.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: [CS 0441 and (CS 0445 or COE 0445)] or (CS 0406 and 0455); (MIN GRADE 'C' or Transfer FOR ALL COURSES LISTED); PROG: Arts and Sciences or Sch Computing and Information

CS 1510 - ALGORITHM DESIGN

Minimum Credits: 3  
Maximum Credits: 3
This course will cover methods and strategies that are useful for the design of nonnumeric algorithms. Students are expected to design their own algorithms.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: [(CS 1501 or COE 1501) and CS 1502] or (CS 0458 and CS 1710); MIN GRADE 'C' or Transfer FOR ALL COURSES LISTED

CS 1511 - INTRODUCTION TO THEORY OF COMPUTATION

Minimum Credits: 3  
Maximum Credits: 3
Understanding the theory of computation provides deeper insights into various topics in computer science. This is an introductory level theory course. The aim of this course is to study the power (or lack of it) of various models of computation. Topics to be covered include: automata, formal languages, computability, and computational complexity.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CS 1502 or 1710; (MIN GRADE 'C' or Transfer FOR ALL COURSES LISTED)

CS 1520 - PROGRAMMING LANGUAGE FOR WEB APPLICATIONS

Minimum Credits: 3  
Maximum Credits: 3
Various programming paradigms will be studied using java and scripting languages. The use of java in programming web based applications, network applications, and the use of the extensive java libraries will be studied. The programming paradigm of building software by gluing components will be explored through the use of scripting languages such as perl and JavaScript. Applications include developing guis and internet programming.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CS 0445 or COE 0445; (MIN GRADE 'C' or Transfer)

CS 1530 - SOFTWARE ENGINEERING

Minimum Credits: 3  
Maximum Credits: 3
The purpose of this course is to provide a general survey of software engineering. Some of the topics covered include: project planning and management, design techniques, verification and validation, and software maintenance. Particular emphasis is on a group project in which a group of students implement a system from its specification.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CS 0445 or COE 0445; (MIN GRADE 'C' or Transfer)

CS 1538 - INTRODUCTION TO SIMULATION
The course introduces students to the concepts, definitions, techniques applicable to the simulation of systems. Both continuous and discrete modeling are covered, with emphasis on the latter. The objective of this course is to familiarize the students with several modern discrete simulation languages, and their use in modeling. Topics include: systems characterization, classification, and modeling; pertinence of probability and statistics theory for stochastic processes and model measurement; discrete systems simulation viewpoints; software modeling techniques.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 0447 and (STAT 1000 or 1100 or 1151 or MATH 1153) (Min Grade ’C’ or Transfer for All Listed Courses)

CS 1541 - INTRODUCTION TO COMPUTER ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
Examination of computer architecture and hardware system organization. Topics include: CPU organization, sequential and microprogrammed control, instruction set implementation, memory organizations, input/output structure, peripherals and computer communications.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CS 0447 or COE 0447) and (CS 0449 or COE 0449) ; (MIN GRADE ’C’ or Transfer)

CS 1550 - INTRODUCTION TO OPERATING SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
An introduction to basic concepts of operating systems, common to most computer systems, which interfaces the machine with upper-level programs. This course will introduce processes as processing unit, process management, concurrency, communication, memory management and protection, and file systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CS 0447 or COE 0447) and (CS 0449 or COE 0449) or (0456 and 1750); MIN GRADE ’C’ or TRANSFER FOR ALL COURSES LISTED

CS 1555 - DATABASE MANAGEMENT SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
The objective of this course is to provide an in-depth knowledge of database systems design. Thus, the emphasis is on how to model one's own data and how to use available database management systems effectively. Towards this end, the relational and the object-relational models are discussed in great detail and object-oriented and other data models are also presented. Commercial database management systems are examined and students get practical experience through the use of such systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 0441 and (CS 0445 or COE 0445) (Min Grade ’C’ or Transfer for all courses)

CS 1566 - INTRODUCTION COMPUTER GRAPHICS

Minimum Credits: 3
Maximum Credits: 3
This course offers an in-depth exploration of fundamental concepts in 2d and 3d computer graphics. The bulk of the course is devoted to 3d modeling, geometric transformations, and 3d viewing and rendering.
CS 1567 - PROGRAMMING SYSTEM DESIGN ON A MOBILIE ROBOT PLATFORM

Minimum Credits: 3
Maximum Credits: 3
Students will be introduced to a variety of programming techniques and paradigms, for implementing medium- to large scale software systems. System integration is done on a mobile robot platform rather than a traditional desktop system. However, this is not a course in robotics. It is a course about building systems in a real-world environment.

CS 1571 - INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Minimum Credits: 3
Maximum Credits: 3
This course will provide an introduction to the fundamental concepts and techniques underlying the construction of intelligent computer systems. Topics covered in the course include: problem solving and search, logic and knowledge representation, planning, reasoning and decision-making in the presence of uncertainty, and machine learning.

CS 1573 - ARTIFICIAL INTELLIGENCE APPLICATION DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
This course will focus on the development of artificial intelligence applications. It will cover symbolic data structures, advanced control structures, and advanced prototyping and data exploration techniques. Multiple areas of artificial intelligence will be covered, such as machine learning, planning, knowledge representation and reasoning or natural language processing. Example application areas may include medical expert systems, web-page categorization and summarization, dialog-based tutoring systems, data mining and knowledge discovery.

CS 1621 - STRUCTURE PROGRAMMING LANGUAGES

Minimum Credits: 3
Maximum Credits: 3
An analytical examination of modern high-level programming language structures; including design specification and implementation. Advanced forms of data types, expressions, and control primitives. Relationship of storage management techniques and language design.

CS 1622 - INTRODUCTION TO COMPILER DESIGN
Minimum Credits: 3  
Maximum Credits: 3  
This course will introduce the basic concepts of compiler design and implementation. Topics include lexical analysis, various types of parsers, intermediate and object code generation and code optimization. The material will be presented from an implementation point of view rather than a formal approach. The impact of language design on compilers will also be examined.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CS 0441 and ((CS or COE 0447) or (CS 0406 and 0456)); (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)  

CS 1630 - SOFTWARE -SYSTEM DESIGN AND MANAGEMENT

Minimum Credits: 3  
Maximum Credits: 3  
CS 1630 software-system design and management is a software engineering course with particular emphasis on project management, usability testing, customer interviewing, specification of formal requirements, and oral communication. In addition to the focus on a team programming project, we discuss, debate, and think about the team software design and development process. The students learn how to effectively communicate orally—from pitching ideas to project manager, to interviewing a customer, resolving conflict with another team member, giving feedback and presenting results.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (CS 1501 or COE 1501) and (CS 1520 or 1530 or 1550 or 1555 or 1566) (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)  

CS 1631 - SOFTWARE DESIGN METHODOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
Construction of large computerized systems proceeds through the stages of requirements analysis, specification, and implementation. This course deals with requirements analysis and specification, in particular, methodologies for improving the reliability of specifications (executable specifications and system phototypes).  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (CS 0441 and (CS or COE 0445)) or (CS 0406 and 0455); (MIN GRADE 'C' OR TRANSFER FOR ALL Listed Courses)  

CS 1632 - SOFTWARE QUALITY ASSURANCE

Minimum Credits: 3  
Maximum Credits: 3  
This course provides students with a broad understanding of modern software testing and quality assurance. Although it will cover testing theory, the emphasis is on providing practical skills in software testing currently used in industry. To that end, it will cover: manual and automated tests, test-driven and behavior-driven development, performance testing, and understanding and developing a testing process.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (CS 0445 or COE 0445 or CS 0455) or (PLAN COE and (CS 0445 or COE 0445) (Min Grade 'C' or Transfer for All Listed Courses)  

CS 1635 - INTERFACE DESIGN METHODOLOGY
Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PREQ: CS 0445 (MIN GRADE 'C' or Transfer)

**CS 1640 - BIOINFORMATICS SOFTWARE DESIGN**

Minimum Credits: 3  
Maximum Credits: 3  
This course will develop software for bioinformatic applications.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PREQ: CS 1501 or COE 1501 or BIOSC 1540 (Min Grade 'C' or Transfer); PLAN: Bioinformatics

**CS 1645 - INTRODUCTION TO HIGH PERFORMANCE COMPUTING SYSTEMS**

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to the architecture of and software techniques for parallel and high performance computing systems. The content includes fundamental aspects of vector processing, shared-memory, and distributed-memory systems. Specific applications in parallel processing paradigms will be covered.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CS 1501 or 1501 or BIOSC 1540 (Min Grade 'C' or Transfer); PLAN: Bioinformatics

**CS 1651 - ADVANCED SYSTEMS SOFTWARE**

Minimum Credits: 3  
Maximum Credits: 3  
To discuss in depth some advanced features of fundamental importance in the design of operating systems. The subjects discussed include interprocess communication, real-time scheduling, advanced file systems, security and protection mechanisms. The objective of the course is to provide an understanding of these advanced issues, as well as to bring awareness of the known solutions to these problems and to the limitations of these solutions.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CS 1501 or 1501 or BIOSC 1540 (Min Grade 'C' or Transfer); PLAN: Bioinformatics

**CS 1652 - DATA COMMUNICATION AND COMPUTER NETWORKS**

Minimum Credits: 3  
Maximum Credits: 3  
This course will include basic principles and topics of computer communications. An overview of interfaces that interconnect hardware and software components, describing the procedures and rules involved in the communication process and the software which controls computers communication. Discussion on network architectures, design principles, basic protocol suites, and the concept of internetworking.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: CS 0447 and 0449 and 1501; (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)
CS 1653 - APPLIED CRYPTOGRAPHY AND NETWORK SECURITY

Minimum Credits: 3
Maximum Credits: 3
This course will provide the necessary conceptual background and hands-on experience to understand the most common cryptographic algorithms and protocols and how to use them to secure computers networks and distributed applications. Topics include: cryptographic algorithms for data confidentiality, authentication, and integrity, user authentication methods (secure tokens and biometrics), internet security protocols, security in local area networks, firewalls, and intrusion detection systems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CS 0449 or COE 0449) and (CS 1501 or COE 1501) or (CS 0458 or CS 1750); (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)

CS 1655 - SECURE DATA MANAGEMENT AND WEB APPLICATIONS

Minimum Credits: 3
Maximum Credits: 3
The main objectives for this course are: (1) to study in more depth query optimization and security, (2) to study advanced topics; data mining, information retrieval, and web data management, and (3) to expose students to advanced data and information management technologies, while gaining hands-on experience. These include mobile data management, continuous queries and their applications in areas such as biomedical informatics and e-commerce.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 0441 and (CS 0445 or COE 0445); (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)

CS 1656 - INTRODUCTION TO DATA SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course aims to expose students to different data management, data manipulation, and data analysis techniques. The class will cover all the major data management paradigms (relational/SQL, XML/Xquery, RDF/SPARQL) including NOSQL and data stream processing approaches. Going beyond traditional data management techniques, the class will expose students to information retrieval, data mining, data warehousing, network analysis, and other data analysis topics. Time permitting, the class will include big data processing techniques, such as the map/reduce framework.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 1501 or COE 1501 (MIN GRADE 'C' or Transfer For All Listed Courses)

CS 1666 - PRINCIPLES OF COMPUTER GAME DESIGN AND IMPLEMENTATION

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to give an introduction and insight into designing and implementing video games. This course questions the nature, intent, and motivation of games and how to construct a compelling experience for users. It is a project-based course, with a final project being to make a game with a small team.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CS 1501; (MIN GRADE 'C' or Transfer)

CS 1671 - HUMAN LANGUAGE TECHNOLOGIES
This course provides an introduction to the field of natural language processing (NLP) - the creation of computer programs that can understand, generate, and learn languages used by humans. It will expose students to real-world applications such as speech recognition, information retrieval, dialogue agents, question answering systems, and machine translations by means of computational techniques including search algorithms, dynamic programming, hidden Markov models, probabilistic context free grammars, and related machine learning algorithms.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CS 1501 or COE 1501) and 1502; (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)

CS 1674 - INTRODUCTION TO COMPUTER VISION

Minimum Credits: 3
Maximum Credits: 3
In this class, students will learn the basics of modern computer vision. The course will cover topics such as image filtering, edge detection, feature extraction, description and matching, grouping and clustering, object detection, activity recognition, and recognition with a human in the loop.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 1501 or COE 1501 (MIN GRADE 'C' OR TRANSFER)

CS 1675 - INTRODUCTION TO MACHINE LEARNING

Minimum Credits: 3
Maximum Credits: 3
This introductory machine learning course will give an overview of many models and algorithms used in modern machine learning, including linear models, multi-layer neural networks, support vector machines, density estimation methods, bayesian belief networks, clustering, ensemble methods, and reinforcement learning. The course will give the student the basic ideas and intuition behind these methods, as well as, a more formal understanding of how and why they work. Through homework assignments students will have an opportunity to experiment with many machine learning techniques and apply them to various real-world datasets.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CS 1501 and (STAT 1000 or 1100 or 1151) (Min Grade 'C' or Transfer for All Listed Courses)

CS 1680 - TEAM PROJECT DESIGN AND IMPLEMENTATION

Minimum Credits: 3
Maximum Credits: 3
Students will choose a project from proposals provided by our faculty and industry partners. Teams will consist of 3 or 4 students and they will be supervised by a project mentor. This course satisfies the capstone requirement.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (CS 1501 or COE 1501) and CS 1550 (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)

CS 1699 - SPECIAL TOPICS IN COMPUTER SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This is a special topics course that allows the computer science department to test run a course before deciding whether to permanently add it to our curriculum.

Academic Career: Undergraduate
CS 1900 - INTERNSHIP

Minimum Credits: 1
Maximum Credits: 6
This course places the student in an "on-the-job" setting in which he/she receives practical experience in a supervised training environment.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

CS 1902 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This course is designed to give students the opportunity to design a plan of study to be agreed upon by the student and a supervising faculty member. This course does not satisfy the computer science capstone requirement.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

CS 1906 - COMPUTER SCIENCE COOPERATIVE PROGRAM

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

CS 1910 - SCIENTIFIC COMPUTER PROGRAMMING

Minimum Credits: 3
Maximum Credits: 3
A first computer science course for graduate students in fields other than computer science. This course emphasizes the development of models and the study of algorithms involving numerical and non-numerical applications. Applications will be implemented using the Fortran language. Some lectures will discuss techniques of simulation, statistics, and matrix manipulations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CS 1920 - CMPTR PROGRAMMING-GRAD STUDENTS

Minimum Credits: 3
Maximum Credits: 3
A first computer science course for graduate students in fields other than the scientific areas of study. Emphasis will be on problem-solving methodology of numerical and non-numerical applications. Solutions will be implemented using the Fortran language. Students will be introduced to the features of a time-sharing computer system (VMS of Unix).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

CS 1950 - DIRECTED RESEARCH
 Minimum Credits: 1
 Maximum Credits: 3
 This course is designed to give students the opportunity to design a plan of study to be agreed upon by the student and a supervising faculty member.

 Academic Career: Undergraduate
 Course Component: Directed Studies
 Grade Component: LG/SNC Elective Basis

 CS 1980 - TEAM PROJECT DESIGN AND IMPLEMENTATION

 Minimum Credits: 3
 Maximum Credits: 3
 Students will choose a project from proposals provided by our faculty and industry partners. Teams will consist of 3 or 4 students and they will be supervised by a project mentor. This course satisfies the capstone requirement.

 Academic Career: Undergraduate
 Course Component: Practicum
 Grade Component: Satisfactory/No Credit
 Course Requirements: PREQ: CS 1550; PLAN: Computer Science (CS-BS, CSCI-BS); (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)

 CS 1981 - PROJECT STUDIO

 Minimum Credits: 3
 Maximum Credits: 3
 This course is designed as a practicum for computer science as both a way to build software of industrial strength and a way to interact with an industrial partner. Software engineering concepts (e.g. scrums, code-sharing repositories, testing, quality assurance, etc) will be used, while spending time on design, algorithms, security, reliability, and networking. Input data as well as metrics will be systematically examined, in order to compare implementations in a qualitative and quantitative way.

 Academic Career: Undergraduate
 Course Component: Practicum
 Grade Component: Satisfactory/No Credit
 Course Requirements: PREQ: CS 1550; PLAN: Computer Science (CS-BS, CSCI-BS); (MIN GRADE 'C' OR TRANSFER FOR ALL COURSES LISTED)

 CMPINF 0999 - SPECIAL TOPICS IN COMPUTING AND INFORMATION

 Minimum Credits: 3
 Maximum Credits: 3
 Various topics in computing and information will be covered.

 Academic Career: Undergraduate
 Course Component: Lecture
 Grade Component: LG/SNC Elective Basis
 Course Requirements: Reserved for Freshman only.

 CMPINF 1999 - ADVANCED SPECIAL TOPICS IN COMPUTING AND INFORMATION

 Minimum Credits: 3
 Maximum Credits: 3
 Various advanced topics in computing and information will be covered.

 Academic Career: Undergraduate
 Course Component: Lecture
 Grade Component: LG/SNC Elective Basis

 CARLOW 0001 - CROSS-REGISTRATION
Minimum Credits: 0.5  
Maximum Credits: 12  
The purpose of cross-registration through the Pittsburgh Council of Higher Education (PCHE) is to provide opportunities for enriched educational programs by permitting undergraduate full-time students at any of the 10 participating colleges and universities to take courses at any other PCHE institution.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: No Grade Required

CCAC 0001 - CROSS-REGISTRATION

Minimum Credits: 0.5  
Maximum Credits: 12  
The purpose of cross-registration through the Pittsburgh Council of Higher Education (PCHE) is to provide opportunities for enriched educational programs by permitting undergraduate and graduate full-time students at any of the 10 participating colleges and universities to take courses at any other PCHE institution.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: No Grade Required

CHATHM 0001 - CROSS-REGISTRATION

Minimum Credits: 0.5  
Maximum Credits: 12  
The purpose of cross-registration through the Pittsburgh Council of Higher Education (PCHE) is to provide opportunities for enriched educational programs by permitting undergraduate full-time students at any of the ten participating colleges and universities to take courses at any other PCHE institution.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: No Grade Required

CMU 0001 - CROSS-REGISTRATION

Minimum Credits: 0.5  
Maximum Credits: 12  
The purpose of cross-registration through the Pittsburgh Council of Higher Education (PCHE) is to provide opportunities for enriched educational programs by permitting undergraduate and graduate full-time students at any of the 10 participating colleges and universities to take courses at any other PCHE institution.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: No Grade Required

DUQU 0001 - CROSS-REGISTRATION

Minimum Credits: 0.5  
Maximum Credits: 12  
The purpose of cross-registration through the Pittsburgh Council of Higher Education (PCHE) is to provide opportunities for enriched educational programs by permitting undergraduate and graduate full-time students at any of the 10 participating colleges and universities to take courses at any other PCHE institution.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: No Grade Required

LAROCHE 0001 - CROSS-REGISTRATION

Minimum Credits: 0.5  
Maximum Credits: 12  
The purpose of cross-registration through the Pittsburgh Council of Higher Education (PCHE) is to provide opportunities for enriched educational programs by permitting undergraduate and graduate full-time students at any of the 10 participating colleges and universities to take courses at any other PCHE institution.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: No Grade Required
The purpose of cross-registration through the Pittsburgh council of higher education (PCHE) is to provide opportunities for enriched educational programs by permitting undergraduate full-time students at any of the 10 participating colleges and universities to take courses at any other PCHE institution.

**Academic Career:** UGRD  
**Course Component:** Lecture  
**Grade Component:** No Grade Required

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**PNPRK 0001 - CROSS-REGISTRATION**

Minimum Credits: 0  
Maximum Credits: 12

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**PTSEM 0001 - CROSS-REGISTRATION**

Minimum Credits: 0  
Maximum Credits: 12

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**RMC 0001 - CROSS-REGISTRATION**

Minimum Credits: 0  
Maximum Credits: 12

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**STVC 0001 - CROSS-REGISTRATION**

Minimum Credits: 0  
Maximum Credits: 12

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**DENT 1917 - DIRECTED STUDY**
DENHYG 1000 - FULL-TIME DENTAL HYGIENE STUDY

Minimum Credits: 0
Maximum Credits: 0
Students who are working full-time toward the Associate of Science Degree in Dental Hygiene may register for this course.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: No Grade Required
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1017 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This directed study is designed for the dental hygiene student who desires to pursue interests in specific area(s). The content of the course is specified by the student and approved by the course director and program director. The teaching format is designed to teach the student specific knowledge or skills using enhanced faculty instruction and personal contact.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1047 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This directed study is designed for the dental hygiene student who desires to pursue interests in specific area(s). The content of the course is specified by the student and approved by the course director and program director. The teaching format is designed to teach the student specific knowledge or skills using enhanced faculty instruction and personal contact.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1077 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This directed study is designed for the dental hygiene student who desires to pursue interests in specific area(s). The content of the course is specified by the student and approved by the course director and program director. The teaching format is designed to teach the student specific knowledge or skills using enhanced faculty instruction and personal contact.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1110 - BIOLOGICAL SCIENCES 1

Minimum Credits: 1
Maximum Credits: 3
This introductory level course is the first of 3 sequential courses in the biological sciences, each of which represents an interdepartmental integration of gross and neuroanatomy, histology and physiology. Through lectures and assigned readings, students will gain insight into structure-function relationships of cells, tissues, organs, and organ systems of the body. This course deals with the cell, epithelium, connective tissue, the skeletal system, myology, blood, the lymphatic system, neural histology, and introductory neural physiology.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

## DENHYG 1112 - INTRODUCTION TO DENTAL HYGIENE

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This course is designed to introduce dental hygiene students to the techniques and information necessary for comprehensive patient care.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

## DENHYG 1113 - INTRODUCTION TO DENTISTRY

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This course provides an overview of the activities of each dental specialty; also, it may include oral anatomy, dental materials and dental charting. The lectures introduce the student to the content and scope of each specialty area; the services delivered with emphasis on dental hygiene interaction.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

## DENHYG 1114 - DENTAL ANATOMY

- **Minimum Credits:** 2  
- **Maximum Credits:** 2  

This course is designed to help students identify the normal structures with the oral cavity. The use of correct terminology is stressed in order to effectively communicate with members of the dental profession. The student will be able to differentiate normal formation of teeth from abnormalities.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

## DENHYG 1115 - RADIOLOGY

- **Minimum Credits:** 2  
- **Maximum Credits:** 2  

This lecture course is designed to familiarize the dental auxiliary student with the terminology and concepts essential to performing dental radiographic procedures. Also included will be the concepts of radiation biology and the radiation protection necessary to safely perform dental radiographic procedures.

**Academic Career:** Undergraduate  
**Course Component:** Lecture
DENHYG 1116 - DENTAL HYGIENE PRECLINIC

Minimum Credits: 2
Maximum Credits: 2
Dental hygiene preclinic is established as the preclinical time for students to observe, discuss, and practice the skills required to perform the oral prophylaxis. Each student works and progresses at his/her own rate and must demonstrate consistent mastery of the skills taught.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1117 - CHEMISTRY, BIOCHEMISTRY AND NUTRITION

Minimum Credits: 5
Maximum Credits: 5
The course is designed to give the students the fundamental principles and concepts of chemistry, biochemistry and nutrition as they are related to physiological and pathological aspects of oral health and the practice of dental medicine. The course is not designed to make the student an expert in chemistry, biochemistry and nutrition but rather to provide the basic principles of these sciences which will enable the student to more effectively manage oral disease.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1241 - PRINCIPLES OF MICROBIOLOGY

Minimum Credits: 4
Maximum Credits: 4
An introductory course in microbiology for dental hygiene students with no previous background in microbiology. Major areas included are microorganisms, immune mechanisms of the host and the interaction of the host and the microorganisms in disease and homeostatis. Major emphasis is placed on diseases with oral manifestations and infection control in dental medicine. The laboratory component is devoted to microbiological methods, infection control and oral ecology.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1242 - BIOLOGICAL SCIENCES 2

Minimum Credits: 3
Maximum Credits: 3
This introductory level course is the second of three sequential courses in the biological sciences. Through lectures and assigned readings, students will gain insight into structure-function relationships of cells, tissues, organs, and organ systems of the body. This course deals with the gross anatomy, neuroanatomy and physiology of the nervous system, including the eye and ear, the cardiovascular system, and the oral cavity with emphasis on the formation and structure of the teeth.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1243 - GERONTOLOGY
Minimum Credits: 3
Maximum Credits: 3
This course will provide the student with an introduction to the phenomenon associated with our aging society. It will also familiarize the student with the special needs of the elderly patient. It will provide background information as to why these needs will be important to the health care professionals of the future. The methods used will be lecture, discussion, partner and group exercises, awareness assignments and simulations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1244 - COMMUNICATIONS

Minimum Credits: 3
Maximum Credits: 3
This course is designed to increase the student's proficiency as a public speaker, through learning organization of material, delivery and criticism of speeches.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1245 - DENTAL HYGIENE RADIOLOGY 1

Minimum Credits: 2
Maximum Credits: 2
This course provides the student with the theoretical knowledge required to achieve a working knowledge of the radiologic sciences as they apply to dental hygiene. Also included will be concepts of radiation safety and radiation biology. An introduction to normal radiographic anatomy and the radiographic aspects of dental pathology will be included.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1246 - MICROBIOLOGY LAB

Minimum Credits: 0
Maximum Credits: 0
Content is devoted to the development of student's basic laboratory skills, application of microbiological methods and will emphasize performance, scientific investigation and safety.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: No Grade Required
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1247 - DENTAL HYGIENE SEMINAR 1

Minimum Credits: 1
Maximum Credits: 1
This course is an extension of the introduction to dental hygiene course. The focus of this course is the special needs and medically compromised patient. It combines lectures, guest presentations and clinical experiences. The students will acquire greater understanding of the psychological and physiological needs of these patients and how to better meet those needs to provide the best patient care.

Academic Career: Undergraduate
Course Component: Seminar
DENHYG 1248 - DENTAL MATERIALS

Minimum Credits: 2
Maximum Credits: 2
This course introduces the dental hygiene student to the field of dental materials. The methods of instruction include didactic and laboratory components. Lectures will cover basic properties of dental materials; gypsum products, waxes, rigid and elastic impression materials and restorative materials. Laboratory sessions give each student practical experience in the proper manipulation of these materials.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1249 - DENTAL HYGIENE CLINIC 1

Minimum Credits: 2
Maximum Credits: 2
This course is scheduled as clinical sessions in which students utilize the skills necessary to perform an oral prophylaxis on individual patients, and to provide patient education.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1370 - INTRODUCTION TO CLINICAL PERIODONTICS

Minimum Credits: 3
Maximum Credits: 3
This course concerns the healthy periodontium, changes with aging, and changes to disease. Classification of periodontal diseases, etiology, histopathology and prevention are discussed. This course teaches the student the role of the hygienist in clinical management, treatment and control of periodontal disease.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1372 - GENERAL AND ORAL PATHOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course in general and oral pathology is designed to give the dental assistant and oral hygiene student as broad a background as possible in both general and systemic diseases, as well as special emphasis on the oral manifestations of these conditions. Additional emphasis is placed on those diseases which are specifically related to the Oro Dental complex. Primary emphasis is placed on the clinical and behavioral manifestations of disease as they relate to pathological processes. Moreover, the radiologic aspects of specific diseases are emphasized where appropriate.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1373 - BIOLOGICAL SCIENCES 3
Minimum Credits: 3
Maximum Credits: 3
This introductory level course is the third of three sequential courses in the biological sciences, each of which represents an interdepartmental integration of gross and neuroanatomy, histology, and physiology. Through lectures and assigned readings, students will gain insight into structure-function relationships of cells, tissues, organs and organ systems of the body. This course deals with the gross anatomy, histology, and physiology of the respiratory, digestive, urinary, and endocrine systems. Wound healing is covered.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1375 - ANESTHESIA FOR DENTAL HYGIENIST

Minimum Credits: 2
Maximum Credits: 2
This course introduces the student to the entire spectrum of pain and anxiety control techniques currently in use in dentistry. Emphasis is placed on the basic physiology of the pain phenomena and the relevant clinical pharmacology of local anesthetics. The general topic of preoperative patient assessment is integrated with a practical and systematic approach to the recognition, management, and prevention of specific medical emergencies that may occur in a dental office.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1376 - DENTAL HYGIENE RADIOLOGY 2

Minimum Credits: 1
Maximum Credits: 1
This course is designed to increase the radiographic interpretation skills of the second year dental hygiene student through the use of critical thinking exercises and an in depth exposure to radiographs illustrating caries, periodontal diseases, trauma and pulpal involvement. Radiographic case formatted questions and exercises will be reviewed to enable students to correlate the pathology content of the curriculum as well as the interpretation of normal and abnormal oral structures.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1377 - DENTAL HYGIENE SEMINAR 2

Minimum Credits: 1
Maximum Credits: 1
This course is an extension of the introduction to dental hygiene course. The focus of this course is the special needs and medically compromised patient. It combines lectures, guest presentations and clinical experiences. The student will acquire greater understanding of the psychological and physiological needs of these patients and how to better meet those needs to provide the best patient care.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1379 - DENTAL HYGIENE CLINIC 2

Minimum Credits: 3
Maximum Credits: 3
This course is scheduled as clinical sessions in which the student integrates and applies knowledge and concepts learned in previous courses to
provide comprehensive dental hygiene care to individual patients.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

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**DENHYG 1411 - DENTAL PHARMACOLOGY**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
This course provides oral hygiene students with the opportunity to become familiar with pharmacotherapeutics as utilized by all health professionals. All drug groups are considered in order to familiarize students with the dental patient's therapeutic status. The therapeutics and adverse effects of the drugs are discussed.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

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**DENHYG 1412 - PUBLIC HEALTH DENTISTRY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Public health dentistry is that portion of the dental hygiene curriculum which prepares students to promote oral health and prevent oral disease in the community through organized community based programs. It provides students with a broad understanding of the social, political, and economic forces directing the system. The approach taken within this course provides students with knowledge and skills necessary to meet specific dental health needs of community groups as distinct from the traditional clinical approach which is designed to meet the needs of individuals.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

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**DENHYG 1414 - GERONTOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will provide the student with an introduction to the phenomenon associated with our aging society. It will also familiarize the student with the special needs of the elderly patient. It will provide background information as to why these needs will be important to the health care professionals of the future. The methods used will be lecture, discussion, partner and group exercise, awareness assignments and simulations.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

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**DENHYG 1417 - DENTAL HYGIENE SEMINAR 3**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
This course is designed to compliment the dental hygiene 3 clinical experience. Students will be exposed to various traditional and non-traditional dental therapeutic techniques including, but not limited to subgingival irrigation with antimicrobial agents, an update of new dental products and devices as well as the presentation of case studies for analyses. The goal of the course is to enhance the clinical and didactic skills of the dental hygienist.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar
DENHYG 1419 - DENTAL HYGIENE CLINIC 3

Minimum Credits: 4
Maximum Credits: 4
This course provides clinical sessions in which the student's integrate and apply knowledge and concepts learned in previous courses to provide comprehensive dental hygiene care to individual patients.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1420 - ETHICS HEALTH CARE PROFESSIONAL

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce health-care professionals to the principles of ethics. Various aspects of ethics will be discussed including the decision making process on which evaluation is based.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1421 - SPECIAL NEEDS DENTISTRY

Minimum Credits: 1
Maximum Credits: 1
The goals of this course are to introduce the dental/dental hygiene student to common developmental and acquired disabling conditions and issues related to the dental care of patients with special needs. The material presented will aid the student in assessing, planning, implementing and monitoring treatment for the patient with special needs.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1422 - HEALTH PROMOTIONS THROUGH THE LIFE SPAN

Minimum Credits: 3
Maximum Credits: 3
This course will examine common health issues found throughout the human lifespan with the intention of exposing students to a holistic perspective of their clinical patient experience. Students will discover and discuss the perceptions and realities of issues such as emerging populations, age specific health issues that are influenced by environmental and social factors and their responsibility as an ethical clinician to promote health throughout the lifespan.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1544 - INTRODUCTION TO RESEARCH ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
This course is designed to make students aware of important aspects of research in the dental profession. Statistical principles necessary for reading and evaluating research articles will be closely examined. This course provides the knowledge and critical thinking skills necessary to analyze and evaluate research articles.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

### DENHYG 1545 - DENTAL HEALTH EDUCATION, METHODS AND PRACTICUM

**Minimum Credits:** 4  
**Maximum Credits:** 4  
This course is an introduction to classroom teaching for the dental hygienist. It involves the acquisition of knowledge and skills for classroom instruction in dental health education. Emphasis is placed on preparation, implementation and evaluation of lesson plans and the design and selection of effective audio-visual aids. It includes six weeks of dental health presentations in the community exhibiting the skills acquired the first half of the course.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

### DENHYG 1547 - DENTAL HYGIENE SEMINAR 4

**Minimum Credits:** 1  
**Maximum Credits:** 1  
This course was designed to synthesize pertinent clinical and basic science information. In addition, students will be required to analyze and present a periodontal case study for peer review.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

### DENHYG 1549 - DENTAL HYGIENE CLINIC 4

**Minimum Credits:** 5  
**Maximum Credits:** 5  
This course was designed to facilitate the synthesis and application of information using a multidisciplinary approach for patient treatment. The clinical environment stimulates and prepares students for a private practice dental setting. All students are afforded the opportunity to participate in internal and external clinical rotations in the capacity of a dental auxiliary. Each student's clinical competency level is assessed and evaluated during all phases of patient treatment.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

### DENHYG 1550 - DENTAL HEALTH EDUCATION METHODS AND PRACTICUM

**Minimum Credits:** 4  
**Maximum Credits:** 4  
This course is an introduction to classroom teaching for the dental hygienist. It involves the acquisition of knowledge and skills for classroom instruction in dental health education. Emphasis is placed on preparation, implementation and evaluation of lesson plans and the design and selection of effective audio-visual aids. It includes six weeks of dental health presentations in the community exhibiting the skills acquired the first half of the course.

**Academic Career:** Undergraduate
DENHYG 1682 - BASIC PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course is an intensive introduction to the application of behavioral theory and intervention for health professionals. Topics include learning theory, assessment, respondent and operant behavior modification, theories of anxiety, stress, and fear, and behavior change strategies for these responses.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1689 - ADVANCED CLINICAL DENTAL HYGIENE PRACTICE

Minimum Credits: 2
Maximum Credits: 2
This course is designed to increase the proficiency and self-direction of the dental hygiene student. The assessment of patient's oral health status, planning and provision of preventive services and the identification of the need for referrals will be stressed. This will enable the student to develop fundamental skills which are necessary for various career options in the dental profession.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1901 - ALLIED HEALTH EDUCATION

Minimum Credits: 3
Maximum Credits: 3
His course provides the student with knowledge and experience in classroom and clinical dental education. Emphasis is placed on the development of objectives and instructional units, teaching methods, learner characteristics, learning styles and conditions, instructional resources, utilization of media, and the evaluation process.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1902 - ALLIED HEALTH EDUCATION PRACTICUM

Minimum Credits: 3
Maximum Credits: 3
This course provides the student with practical experience in both the dental hygiene classroom and clinical settings.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1903 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This course allows the student in conjunction with their advisor to expand their knowledge and experience in the identified area of interest. Projects to be determined by the student and approved by the advisor.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

**DENHYG 1904 - DIRECTED STUDY**

- **Minimum Credits:** 1  
- **Maximum Credits:** 3

This course allows the student in conjunction with their advisor to expand their knowledge and experience in the identified area of interest. Projects to be determined by the student and approved by the advisor.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

**DENHYG 1921 - HEALTH MANAGEMENT SEMINAR**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3

This seminar course is designed to provide the student with a broad based understanding of the health care delivery system. Emphasis will focus on leadership, management, quality assurance, development of dental health programs, and current health care delivery issues.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

**DENHYG 1922 - HEALTH MANAGEMENT PRACTICUM**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3

This course provides the student through a variety of field experiences with the opportunity to apply the knowledge gained in the health management seminar.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

**DENHYG 1923 - DIRECTED STUDY**

- **Minimum Credits:** 1  
- **Maximum Credits:** 3

This course allows the student in conjunction with their advisor to expand their knowledge and experience in the identified area of interest. Projects to be determined by the student and approved by the advisor.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** H/S/U Basis  
**Course Requirements:** PROG: School of Dental Medicine (Undergraduate)

**DENHYG 1924 - DIRECTED STUDY**
Minimum Credits: 1
Maximum Credits: 3
This course allows the student in conjunction with their advisor to expand their knowledge and experience in the identified area of interest. Projects to be determined by the student and approved by the advisor.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1942 - SCIENTIFIC LITERATURE EVALUATION

Minimum Credits: 3
Maximum Credits: 3
This course includes the study of topics and/or problems related to current dental and dental hygiene research. Critical review of published research literature, analysis and interpretation of the research data, and the application of the findings are emphasized in this course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1945 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This course allows the student in conjunction with their advisor to expand their knowledge and experience in the identified area of interest. Projects to be determined by the student and approved by the advisor.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DENHYG 1947 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This course allows the student in conjunction with their faculty advisor to expand their knowledge and experience in the area of dental hygiene education. Projects to be determined by the student and approved by the advisor.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis
Course Requirements: PROG: School of Dental Medicine (Undergraduate)

DSPHL 1010 - DENTAL PHARMACOLOGY

Minimum Credits: 2
Maximum Credits: 2
This course provides oral hygiene students with the opportunity to become familiar with pharmacotherapeutics as utilized by all health professionals. All drug groups are considered in order to familiarize students with the dental patient's therapeutic status. The therapeutics and adverse effects of the drugs are discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ECON 0100 - INTRODUCTION TO MICROECONOMIC THEORY
Minimum Credits: 3
Maximum Credits: 3
Introduction to principles of economic analysis as applied to the study of prices and markets. The course builds a theoretical basis for understanding producer and consumer behavior, and prepares students to appreciate the importance of markets in our economic system.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ECON 0110 - INTRODUCTION TO MACROECONOMIC THEORY

Minimum Credits: 3
Maximum Credits: 3
An introductory course which develops the basic tools needed to analyze the behavior of various macroeconomic phenomena including inflation, gross domestic product, and unemployment. In addition, these tools are used to study how and whether the government can impact the behavior of the overall economy. Finally, the course looks at the role various institutions such as banks and the stock and bond markets play in affecting the economic environment.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ECON 0150 - QUANTITATIVE ANALYSIS FOR ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
An introduction to economic data and statistical concepts. Topics covered include: measures of location and dispersion and introduction to probability theory; characteristics of probability distributions; sampling theory, point estimation and hypothesis testing. Correlation analysis and the linear regression model are treated with special emphasis placed on the construction, estimation, and interpretation of economic models. Emphasis is placed on understanding and using statistical concepts rather than on proving theorems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ECON 0160 - INTRODUCTION TO ECONOMETRICS

Minimum Credits: 3
Maximum Credits: 3
Develop an understanding of basic econometrics. Teaches use of the computer for econometric and statistical analysis, and how to acquire information about published data on basic economic activity. Attempts to develop an understanding of the difficulties inherent in collecting and interpreting actual data. The heart of the course is the development of basic econometric skills. Learning about data sources and computer software will be included as the basic econometric theory is developed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ECON 0200 - GAME THEORY PRINCIPLES

Minimum Credits: 3
Maximum Credits: 3
This course introduces the basic concepts of game theory. The emphasis is on the unifying perspective that game theory offers to questions in economics, other disciplines, and everyday life. The course draws on a wide range of substantive and intellectually stimulating applications of game theory across areas in economics, other disciplines, and beyond. It will enable students to view social interactions as strategic games, to use game theoretic concepts to predict behavior in these interactions and to conceive of ways in which altering the game affects social outcomes.
Academic Career: Undergraduate
ECON 0220 - INTRO TO HEALTH ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
This course applies microeconomic analysis to the allocation of resources and consumption of products within the health care economy. It will allow students to develop an understanding of microeconomic theory, in particular as it is applied to real world problems. Also it will provide students with knowledge of the economic aspects of health care in the US and related policy. Unique features of health care which interfere with competitive market allocation and pricing will be emphasized.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 0100 and (MATH 0120 or 0220 or 0230 or 0235 or (0125 and 0126)); MIN GRADE 'C' for all courses

ECON 0230 - INTRODUCTION TO PUBLIC ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
The objectives of this course are - to illustrate how basic economic principles can be used to determine the economic effects of government expenditure and tax policies; to develop the students' ability to analyze issues and to recognize the value judgments which lie behind various positions taken in current policy debates.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 0100 or 0800

ECON 0280 - INTRODUCTION TO MONEY AND BANKING

Minimum Credits: 3
Maximum Credits: 3
The course is directed toward giving the student an insight into the role that monetary policy and financial markets play in the economy. It will cover both the theoretical and institutional aspects of banking necessary to function successfully in the business world. One object of the course is to give the student the ability to analyze and appraise critically the monetary policy of federal reserve system.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 0110 or 0800 (MIN GRADE 'C')

ECON 0360 - INTRODUCTION TO ENVIRONMENT AND RESOURCE ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
Basic economic theory applied to issues involving joint interaction of economic activity, the environment, and use of natural resources. Debate over the sustainability of economic development, renewability and/or depletion of natural resources, and effects of pollution on environmental quality will be surveyed. The issues of ozone depletion, loss of biodiversity, and greenhouse gas emissions and global warming will be considered.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 0100 or 0800

ECON 0400 - LABOR AND THE ECONOMY
Minimum Credits: 3  
Maximum Credits: 3  
An introductory survey of contemporary labor developments and issues. Readings and lectures have a more historical and institutional perspective and less emphasis on analytical techniques than other labor offerings.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 0100 or 0800 (Min Grade 'C')

ECON 0430 - WOMEN IN THE LABOR MARKET

Minimum Credits: 3  
Maximum Credits: 3  
The empirical evidence suggests that women earn lower income than men, and that the wage rates earned by women are lower than those of men --- even when they have similar job classifications. This course examines the role of women in the labor market; the nature of their decision to invest in education, their labor force participation, and the demand for their labor services. In this way, a framework for policy analysis is developed.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 0100 or 0800

ECON 0500 - INTRODUCTION TO INTERNATIONAL ECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
Provides an introduction to international economics. Half the topics are pure theory, half international monetary economics. Topics from the real world are analyzed. Topics include alternative pure trade theories; effects of trade barriers; U.S. commercial policy; forms of regional integration; balance of payments; elimination of balance of payments disequilibrium; international monetary system.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (ECON 0100 and 0110) or 0800 (MIN GRADE 'C')

ECON 0501 - INTRODUCTION TO INTERNATIONAL ECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to the basic issues of international economics and to the historical evolution and institutional structure of the international economy. Topics include mercantilism, comparative advantage as a basis for trade, the impact of trade on income distribution, the evolution of the international financial system, and the working of the international gold standard.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis

ECON 0530 - INTRODUCTION TO DEVELOPMENT ECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
An introductory description and analysis of the economic systems of countries commonly referred to as less developed countries. Alternative development policies with respect to international trade, agriculture, industry, health, and education will be outlined. The roles played by government, population growth, environmental degradation, income distribution, and foreign aid will be discussed. The economic aspects of development will be stressed.

Academic Career: Undergraduate  
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (ECON 0100 and 0110) or ECON 0800 (MIN GRADE 'C')

ECON 0630 - EAST ASIA'S DYNAMIC ECONOMIES

Minimum Credits: 3
Maximum Credits: 3
An introductory survey of several East Asian economies. The primary objective is to equip students with a clear understanding of major elements of recent Asian economic history and current economic conditions, and of implications of Asian economic gains for the United States economy, particularly U.S. Trade relationships with this region and their dynamically changing patterns. A secondary objective is to use case studies and empirical materials as vehicles to appreciate how economic principles can be used in real world analysis.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ECON 0100 and 0110) or ECON 0800; MIN GRADE: 'C' for all listed Courses; PLAN: Economics (ECON-BA), Economics (ECON-BS), Economics-Statistics (ECNSTC-BS), Mathematics-Economics (M-ECON-BS)

ECON 0640 - ECONOMIC DEVELOPMENT OF THE MIDDLE EAST AND NORTH AFRICA (MENA) REGION

Minimum Credits: 3
Maximum Credits: 3
This course is designed to expose students to current views by academics and policy makers on past practices and future challenges facing the economies of the Mena region. The course will be taught with an interdisciplinary emphasis on political, social, and cultural, as well as economic aspects. Assignments will include a research paper in addition to a group project presentation. Students will gain an overall understanding of the economic problems of the region, and will be able to effectively analyze changes in the economic climate of the region.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ECON 0800 - INTRODUCTION TO ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
A one-term course designed primarily for the non-major. The main goals are to create interest in the study of economics and introduce some basic tools economists use to analyze social issues. Issues range from farm subsidies to changes in income tax rates to changes in spending on crime reduction.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ECON 0900 - ECONOMICS: INTRODUCTION TO THE FIELD MAJORS

Minimum Credits: 1
Maximum Credits: 1
This course has 3 interrelated goals: 1. Students will understand the range of career and advanced degree options for which their studies in Economics will make them eligible. 2. Students will learn how to conduct research in economics. The course will explain how to use the Economics literature and publicly available data sources. 3. Students will maximize progress within the major by setting broader goals and taking advantage of the many opportunities offered at the University.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit
Course Requirements: RESTRICTED TO ECON PLANS: ECON-BA; ECON-BS; ECNSTC-BS; M-ECON-BS
ECON 0905 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
Current topics of particular interest to economics majors are discussed and analyzed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ECON 1010 - AMERICAN ECONOMIC HISTORY

Minimum Credits: 3
Maximum Credits: 3
The course presents a survey of the strategic factors in the economic development of the United States from colonial times to the great depression. The topics covered include the record of economic growth, the process industrialization and its major phases, British mercantilism, the role of technological change, demographic history, the slave economy, distribution of income, urbanization, and the financial sector.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 0100 or 0800 (MIN GRADE 'C')

ECON 1030 - INTELLCL FOUNDTNS OF CAPITALISM

Minimum Credits: 3
Maximum Credits: 3
This course explores the salient features of European economic development from the black plague of the middle ages to the great depression of the 1930's. The emphasis will be to understand how social, demographic, and economic processes interacted and ultimately culminated in one of the most momentous events in the history of mankind, the industrial revolution. We shall venture an explanation for why Europe was the first continent and England the first country to industrialize. The social changes in the aftermath of the revolution will also be covered.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ECON 1040 - POLITICS AND THE ECONOMY

Minimum Credits: 3
Maximum Credits: 3
Study of modern Marxian economic theory with applications to contemporary and developing capitalist economies. Marxian method contrasted to modern economic methods. Historical example illustrating Marx's concepts of economic and social change. Marxian economic theory covering such topics as commodities, labor theory of value, the circuits of capital, relative and absolute surplus value, technological change, reproduction schemes, accumulation and crisis. Comparisons and contrasts to traditional economic theory. Empirical applications.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 1100 (MIN GRADE 'C'); PROG: School of Arts & Sciences

ECON 1050 - SOCIALISM VERSUS CAPITALISM

Minimum Credits: 3
Maximum Credits: 3
The course covers the economic changes that produced capitalism; the attempts to understand capitalism which culminated in the theories of Adam Smith; the problems of communist societies and their attempts to return to some form of capitalism.
Academic Career: Undergraduate
ECON 1100 - INTERMEDIATE MICROECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
An intermediate-level course in resource allocation theory emphasizing the origins and uses of theoretical reasoning in economic analysis. Topics covered include the methodology of economic analysis; theories of consumer behavior; demand and supply analysis; production theory; the theories of the firm and market behavior; income distribution theory; and general equilibrium theory.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 0100 and 0110 and [MATH 0120 or 0220 or (0125 and 0126) or 0230 or 235]; MIN GRADE: 'C' For All Listed Courses

ECON 1110 - INTERMEDIATE MACROECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
A systematic treatment of macroeconomic analysis including such topics as policy analysis, inflation-unemployment tradeoffs, business cycles, budget deficits, and the balance of payments.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 0100 and ECON 0110 and [MATH 0120 or 0220 or (0125 and 0126) or 0230 or 235]; MIN GRADE: 'C' For All Listed Courses

ECON 1150 - APPLIED ECONOMETRICS 1

Minimum Credits: 3  
Maximum Credits: 3  
Introduces basic tools in applied econometrics that are commonly employed in government, business, and academic research. The main emphasis is on application of various econometric methods. Students are expected to become familiar with standard computer programs that are frequently used in quantitative economic research. Topics covered are a review of basic statistics, classical linear regression models, and associated inferential problems, and generalized linear regression models and associated inferential problems.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (ECON 1100 or ECON 1110) MIN GRADE: 'C' and [MATH 0120 or 0220 or (0125 and 0126) or (0230 or 0235)] and (STAT 0200 or 1000 or 1100 or 1152)

ECON 1180 - MATHEMATICAL ECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
An initial course for graduate students or for undergraduates with a strong math background. Topics will include nonlinear and linear optimization models and simulation applications to economic problems. The optimization topics will include an introduction to activity analysis and Kuhn Tucker Theory. To facilitate the study of these, some topics concerning linear inequalities and convex functions will be discussed. Application of each topic to economic theory and policy will be stressed. The computer will be used for solving problems.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 1100 (MIN GRAD 'C') and [MATH 0120 or 0220 or (0125 and 0126) or 0230 or 235]
ECON 1200 - GAME THEORY

Minimum Credits: 3
Maximum Credits: 3
The aim of the course is to introduce the main elements of game theory, in a manner which emphasizes the connections between the "cooperative" and "non-cooperative" traditions. Students will be expected to develop understanding sufficient to construct proofs as well as to perform computations, and there will be emphasis on modelling issues.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0120 or 0220 or (0125 and 0126) or 0230 or 235 and (STAT 0200 or 1000 or 1100); MIN GRADE: 'C' FOR LISTED COURSES

ECON 1230 - INTERMEDIATE PUBLIC ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
Fundamentals of policy analysis will be reviewed and then applied to a small set of current policy questions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 1100 (MINGRADE: 'C')

ECON 1250 - BEHAVIORAL ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
This course will expose students to how insights from psychology and experiments have been incorporated into economic models. We will discuss how the insights have changed our understanding of markets and auctions, strategic interactions (game theory), individual decision making under uncertainty and over time, political behavior and more. We will also explore the welfare and policy implications of the findings from behavioral economics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 1100 (Min Grad 'C')

ECON 1280 - MONETARY THEORY AND POLICY

Minimum Credits: 3
Maximum Credits: 3
Course focuses on financial system and important role it plays in facilitating growth in the U.S. Economy. Financial intermediaries are discussed with emphasis placed on the banking system and its regulator, the federal reserve system, the federal reserve's influence on money supply and interest rates and nonbank public's demand for money is discussed. Role of monetary policy in promoting price stability and economic growth discussed in the context of a U.S. Economy that is growing more integrated with worldwide economic events.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 1110 (MIN GRADE 'C')

ECON 1360 - ENVIRONMENTAL ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
Basic economic theory is applied to issues involving the joint interaction of economic activity, the environment, and use of natural resources. The
debate over the sustainability of economic development, the renewability and/or depletion of natural resources, and the effects of pollution on environmental quality will be surveyed, including the issue of greenhouse gas emissions and global warming. Benefit-cost analysis, optimal tax and regulatory schemes, public goods, property rights, emission rights markets, and other economic policy instruments/concepts will be studied.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 1100 (MINGRADE: ‘C’)

ECON 1420 - LABOR ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
This is an advanced elective course on labor economics for undergraduate students. The purpose of the course is to apply the analytical tools from intermediate microeconomic theory to analyze how society develops, allocates and rewards human resources, and to study a wide range of labor-related issues, such as labor supply; household production and labor force participation; labor demand; minimum wages; labor market discrimination; compensating wage differentials; schooling and earnings; wage inequality, and immigration. Emphasis will also be given to the empirical evidence on those topics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 1100 (MINGRADE: ‘C’)

ECON 1440 - ECONOMICS OF CORPORATION FINANCE

Minimum Credits: 3
Maximum Credits: 3
The course is intended as an analysis of the investment valuation and financing of the corporation. Attention will be focused on the application of economic theory to the solution of financial problems. The interrelations between investment and financing policies and their dependence on security valuations will be stressed. The institutional background necessary to analyze these problems will be examined, and practical cases drawn from personal and business situations will be used along with more theoretical materials.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 1100 (MINGRADE: ‘C’)

ECON 1470 - MARKET STRUCTURE AND COMPETITION

Minimum Credits: 3
Maximum Credits: 3
The course is a survey of the behavior of firms, the structure of industrial markets, and market performance. The survey will cover both theoretical models and empirical analyses.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ECON 1100 (MINGRADE: ‘C’)

ECON 1500 - INTERMEDIATE INTERNATIONAL TRADE

Minimum Credits: 3
Maximum Credits: 3
This course is an intermediate level survey of the theory of international trade and related evidence. Topics include causes and consequences of international trade, trade and income distribution, commercial policy, political economy aspects of trade policy, preferential trading arrangements (NAFTA, European Union, etc.), Trade and development, and others. While no one geographic area is singled out, examples will come from most areas of the world economy.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PLAN: Economics (BA or BS); PREQ: ECON 1100 (Min Grad 'C')

ECON 1510 - INTERMEDT INTERNATIONAL FINANCE

Minimum Credits: 3  
Maximum Credits: 3  
This course provides an in-depth analysis of international monetary economics and related topics in the area of international finance. Topics to be covered include exchange rate determination, balance of payments, exchange market efficiency, forward exchange rates, effects of devaluation, the international monetary system.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 1100 (MIN GRADE: 'C')

ECON 1580 - ECON GROWTH PBLC HLTH DEMOGRAPHY

Minimum Credits: 3  
Maximum Credits: 3  
Surveys the principal elements of demographic science, particularly within the context of developed and developing economies. Focuses on causes and consequences of changes in mortality, natality, migration and immigration as they apply to such current problems as (1) sufficient saving; (2) physical capital accumulation; (3) productivity changes; (4) the distribution of wealth and income, and (5) changes in population dependency ratios.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 1110 or 1110 (MINGRADE: 'C')

ECON 1610 - LATIN AMERICA ECON DEVELOPMENT

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 1100 or 1110 (MINGRADE: 'C') For All Listed Courses

ECON 1630 - ECONOMIC DEVELOPMENT OF CHINA

Minimum Credits: 3  
Maximum Credits: 3  
This course surveys the development of China's economy since 1800 with particular emphasis on studying China's experience under different forms of economic organization (market economy, central planning, reformed system combining plan and market) and comparing China's development with that of other nations.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 0800 or (ECON 0100 and 0110)
ECON 1680 - ECONOMICS OF THE EUROPEAN UNION

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to economy of Europe, including theory and institutions of European community as they relate to economic systems, its economic relations with other European states and the world, its economic problems and policies. Elementary economics will be reviewed, but no specialist knowledge is required. European economic policies are examined in a critical manner. Some study of breakdown of eastern bloc and the implications of eastern European crisis for European community and the United States.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (ECON 0100 and 0110) or ECON 0800; MIN GRADE: 'C' FOR ALL COURSES LISTED

ECON 1700 - PROSEMINAR METHODOLOGY OF ECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
Critically surveys the current methodology employed in economics.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 1100 (Min Grade 'C') and (ENGCMP 0200 or ENGCMP 0203 or ENGCMP 0205 or FP 0003)

ECON 1701 - GREEN INFRASTRUCTURE IMPLEMENTATION: A CASE STUDY OF THE PITTSBURGH REGION

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to exercise the student's academic knowledge, passions, and skills to facilitate real-world problem solving in a collaborative setting. It will improve the students' skills in these areas: analytical; collaborative work; project management; communication; experimentation; and decision analysis. Differences in baseline skills and interests will be recognized in assignments and grading.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

ECON 1710 - PROSEM INTERNATIONAL ECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
Course discusses and analyzes topics of importance in international trade. Examples of some topics are trade agreements, free trade winners and losers, and speculation of effects of trade agreements.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ECON 1100 and ECON 1110 (Both Min Grade: 'C') and (ENGCMP 0200 or ENGCMP 0203 or ENGCMP 0205 or FP 0003)

ECON 1720 - PRO-SEMINAR MONETARY & MACROECON

Minimum Credits: 3  
Maximum Credits: 3  
A major function of the seminar will be to encourage clear and effective writing, following accepted conventions of style.  
Academic Career: Undergraduate  
Course Component: Seminar
**ECON 1730 - SEMINAR EXPERIMENTAL ECONOMICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
There is a small, but rapidly growing literature in which behavioral experiments are used to test central propositions of various economic theories. This course will review the experimental literature that exists in several areas of economics, including industrial organization, social choice and preference revelation, behavior of decentralized markets, and bargaining.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ECON 1110 (Min Grade: 'C') and (ENGCMP 0200 or ENGCMP 0203 or ENGCMP 0205 or FP 0003)

**ECON 1901 - INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 12  
Student designed project of study in a particular area of economics. Supervised closely by a faculty member.  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**ECON 1902 - DIRECTED STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 12  
Faculty supervised project of student design.  
**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** Satisfactory/No Credit

**ECON 1903 - DIRECTED RESEARCH**

**Minimum Credits:** 1  
**Maximum Credits:** 12  
Faculty supervised research project of student design or faculty suggestion.  
**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

**ECON 1905 - SPECIAL TOPICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Current topics of particular interest to economics majors are discussed and analyzed.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ECON 1906 - INTERNSHIP**
**Minimum Credits:** 1  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit

**ECON 1907 - UNDERGRADUATE TEACHING ASSISTANT**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Satisfactory/No Credit

**EDUC 1011 - CULTURALLY RESPONSIVE PEDAGOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Instructional practices that respond to the social context in which they (will) work. The course covers general principles and approaches to culturally responsive teaching such as how teachers develop meaningful relationships with students, how teachers learn from and about a school and local community, how teachers develop and implement culturally responsive classroom management, and how teachers develop expectations for students that maximize their capacity. In addition, the course will assist students in learning about and developing culturally responsive curriculum and pedagogy in their different content/subject matter areas (such as mathematics, science, art, language arts, and social studies). A recurrent and central question of the course is: how do teachers develop culturally responsive instructional practices in their particular disciplinary domain to maximize students learning opportunities?  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade

**EDUC 1998 - DIRECTED STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
Student pursues study of various topics under the direction of a faculty member.  
**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SU3 Elective Basis

**ECE 0031 - LINEAR CIRCUITS AND SYSTEMS 1**

**Minimum Credits:** 4  
**Maximum Credits:** 4  
The analysis of linear circuits. Electric variables and circuit elements; Kirchhoff's and Ohm's Law; Mesh and Node Equations; Thevenin and Norton equivalent circuits; first and second-order circuits; time domain analysis.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (MATH 0150 or 0230 or 00231 or 0235) and (PHYS 0152 or 0175 or 0202 or 0476); PROG: Swanson School of Engineering

**ECE 0035 - LINEAR CIRCUITS AND SYSTEMS LAB FOR TRANSFERS STUDENTS**

**Minimum Credits:** 1  
**Maximum Credits:** 1
ECE 0041 - LINEAR CIRCUITS AND SYSTEMS 2

Minimum Credits: 3  
Maximum Credits: 3  
Sinusoidal steady-state analysis, network functions, real and reactive power, three-phase circuits, laplace transform method, two-port networks, and Fourier series.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: ECE 0031 or COE 0031; PLAN: Electrical Engineering or Computer Engineering

ECE 0132 - DIGITAL LOGIC

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to digital systems, Boolean algebra, minimization of logic functions, combinational and sequential circuit design.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (MATH 0150 or 0230 or 0231 or 0235) and (PHYS 0152 or 0175 or 0202 or 0476); PROG: Undergraduate Swanson School of Engineering

ECE 0142 - COMPUTER ORGANIZATION

Minimum Credits: 3  
Maximum Credits: 3  
Digital computer data representation, instruction formats, control, memory and input-output units, microprocessors, minicomputers.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: ECE 0132 or COE 0132; PROG: Swanson School of Engineering

ECE 0257 - ANALYSIS AND DESIGN OF ELECTRONIC CIRCUITS

Minimum Credits: 3  
Maximum Credits: 3  
Diode circuits, power supply design; analysis and design of bipolar junction transistor and field effect transistor amplifiers. Bias stability analysis, power amplifiers. Ideal operational amplifiers. Cmos inverters.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: ECE 0031 or COE 0031; PROG: Swanson School of Engineering

ECE 0501 - DIGITAL SYSTEMS LABORATORY

Minimum Credits: 3  
Maximum Credits: 3  
This course and laboratory introduces students to the basic concepts of digital circuits, simulation and instrumentation, systems composed of discrete devices, logic gates, combinatorial and sequential circuits are designed, simulated, built and tested.  
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ECE 0031 or COE 0031) and (ECE 0132 or COE 0132); PROG: Swanson School of Engineering

ECE 1120 - HARDWARE DESIGN METHODOLOGIES 1

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ECE 1150 - INTRO TO COMPUTER NETWORKS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ECE 0142) or (COE 0142 or 0147 or 0447) or (CS 0447); PROG: Undergraduate Swanson School of Engineering

ECE 1160 - INTRODUCTION TO EMBEDDED SYSTEM DESIGN

Minimum Credits: 3
Maximum Credits: 3
Introduction to the concepts and techniques of embedded system design including requirements, specifications, design implementation and testing. The laboratory is centered around the Altera Excalibur system and the NIOS core processor. Senior design course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ECE 0142) or (COE 0142 or 0147 or 0447) or (CS 0447); PROG: Undergraduate Swanson School of Engineering

ECE 1161 - EMBEDDED COMPUTER SYSTEM DESIGN 2

Minimum Credits: 3
Maximum Credits: 3
Organized as a full term project carried out by student design groups. A complex embedded system will be designed, implemented and tested using Altera and other cad tools. Grade will be based on project reviews and the final project report. Proper design process will be emphasized.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ECE 0142) or (COE 0142 or 0147 or 0447) or (CS 0447); PROG: Undergraduate Swanson School of Engineering

ECE 1170 - SPECIAL TOPICS: COMPUTER

Minimum Credits: 3
Maximum Credits: 3
An undergraduate course dealing with special topics of current interest in computers.
Academic Career: Undergraduate
Course Component: Lecture
ECE 1180 - COMPUTATIONAL MODELING AND SIMULATION FOR ENGINEERS

Minimum Credits: 3
Maximum Credits: 3
In this course students will develop several software programs to model and simulate a range of different physical systems. The course will focus on building software simulations of systems in terms of underlying model objects, world representations, interactions between objects, and a variety of models for time. Some experience in c/c++ programming is assumed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ECE 1201 or (ECE 0501 or COE 0501); LEVEL: Must be at least a Junior in Credits Hours; PROG: Swanson School of Engineering

ECE 1186 - SOFTWARE ENGINEERING

Minimum Credits: 4
Maximum Credits: 4
This course and laboratory introduces classical and object oriented software engineering. Software requirements, specification, object-oriented analysis, design, implementation, integration, and maintenance are covered. Each of these phases is examined on a practical level through a semester long, formal design project that involves the creation of a java-based internet application. Additional java-related topics are taught, including java applets, custom networking, remote database access, SQL, and multimedia extensions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: COE 0445 or CS 0445; PROG: School of Engineering

ECE 1188 - CYBER-PHYSICAL SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
The arrival of the internet-of-things (IOT) has brought about a world where the everyday objects we interact with, ranging from health monitoring devices to appliances and automobiles, are embedded with intelligence, the ability to communicate over a network and act on information stored in the "cloud". In this intensive laboratory course, students, by way of a series of projects, follow the journey data takes from a sensor, to a microcontroller, through a network and then to the cloud (and back!). Along the way students are exposed to a broad range of electrical and computer engineering topics including electronic design, embedded programming, digital signal processing, networking and information theory, wireless communications, antenna theory and big data analytics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ECE 0142) or (COE 0142 or 0147 or 0447) or (CS 0447) and (COE 0401 or CS 0401); PLAN: Electrical Engineering

ECE 1192 - INTRODUCTION TO VLSI DESIGN

Minimum Credits: 4
Maximum Credits: 4
Introduction to the concepts and techniques of modern integrated circuit design. Use of computer aided design (cad) tools for circuit design and simulation. Senior design course, includes a laboratory.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ECE 0142) or (COE 0142 or 0147 or 0447) or (CS 0447); PROG: Undergraduate Swanson School of Engineering

ECE 1193 - ADVANCED VLSI DESIGN

Minimum Credits: 3
Maximum Credits: 3
This course is organized as a full semester project in conjunction with a small amount of lecture material on advanced CMOS digital design techniques, as well as the group design process itself. Students form groups of 3 to 5 per group that design and implement different VLSI projects which are then fabricated by MOSIS and returned for testing. Focus is on teamwork with frequent oral/written reports.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ECE 1192 or ECE 2192; PROG: Swanson School of Engineering

ECE 1201 - ELECTNC MEASURMNTS & CRCTS LAB

Minimum Credits: 3
Maximum Credits: 3
Electronic measurements and circuits including experiments on use of electronic test equipment, a variety of linear circuits; non-linear device characteristics, operational amplifier basics, and transistor amplifier characteristics and design. Time and frequency domain methodologies are covered.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: ECE 0257; PROG: Undergraduate Swanson School of Engineering

ECE 1212 - ELECTRONIC CIRCUIT DESIGN LAB

Minimum Credits: 3
Maximum Credits: 3
An electronic circuits laboratory experience with emphasis on circuit applications and design. Topics include: multi stage amplifier design; operational amplifier applications; analog-digital conversion applications, active filters.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ECE 1201; PROG: Swanson School of Engineering

ECE 1232 - INTRO LASERS & OPTCL ELECTNC

Minimum Credits: 3
Maximum Credits: 3
Introduction to and applications of basic laser and optical electronic principles; optical modulation and detection systems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ECE 0031 or COE 0031) and (ECE 1259 or PHYS 1351); PROG: Swanson School of Engineering

ECE 1238 - DIGITAL ELECTRONICS

Minimum Credits: 3
Maximum Credits: 3
Switching behavior of semiconductor devices; logic circuit families; DTL, TTL, Schottky, Ecl, CMOS, i2l; regenerative logic circuits; semiconductor memories; spice circuit simulation.
ECE 1247 - SEMICONDUCTOR DEVICE THEORY

Minimum Credits: 3
Maximum Credits: 3
Electrical properties of solids, energy levels, semiconductor theory, diodes, bipolar junction transistors, field effect transistors.

ECE 1250 - NANOTECHNOLOGY & NANO-ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
The course introduces nanoscale devices created from a range of nanomaterials including carbon nanotubes (CNTS), nanoparticles (NPS), and nanowires (NWS). Theories of operation, fabrication techniques and applications of Nano devices will be discussed. The course combines lecture, laboratory work, and web-supported project-based learning.

ECE 1259 - ELECTROMAGNETICS 1

Minimum Credits: 3
Maximum Credits: 3
Vector calculus, gradient curl, divergence theorem and stokes' theorem, coulomb's law gauss's law, Laplace equation, poisson equation, dielectrics, BIOT-Savart Law, vector potentials, ampere's law, faraday's law, inductance, magnetic materials, Lorentz force, Maxwell's equation, electromagnetic radiation.

ECE 1266 - APPLICTIONS OF FIELDS & WAVES

Minimum Credits: 3
Maximum Credits: 3
Plane waves, the wave equation, poynting vector, transmission lines, wave guides, antennas and radiation applications.

ECE 1270 - SPECIAL TOPICS: FUNDAMENTALS ELECTRONICS PROTOTYPING
Minimum Credits: 1
Maximum Credits: 1
An undergraduate course dealing with special topics of current interest in electronic devices, lasers, and optical electronics.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: ECE 0501 or COE 0501 or ECE 1201 or ECE 0031 or COE 0031; PROG: Swanson School of Engineering; PLAN: Electrical Engineering Students Only

ECE 1286 - ANAL & DSGN ANLG INTGRTD CRCT

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ECE 0257; PROG: Swanson School of Engineering

ECE 1390 - INTRO TO IMAGE PROCESSING

Minimum Credits: 3
Maximum Credits: 3
Introductory subjects in image processing include image spaces and image representation, image enhancement, edge detection, edge and region based segmentation, and feature extraction and object recognition. Spatial and frequency domain approaches will be addressed with emphasis on spatial domain approaches. Some problems are solved on the computer in the c programming language.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Undergraduate Swanson School of Engineering; LVL: Sr

ECE 1391 - PROJECTS IN COMPUTER VISION

Minimum Credits: 3
Maximum Credits: 3
A set of full-term group projects attacking problems in image processing and computer vision. Projects will typically involve the development of problem solutions on computer vision workstations in the c programming language.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

ECE 1472 - ANALOG COMMUNICATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Analysis of modern analog communication systems, including the theory underlying their design and practical implementation issues. Various forms of amplitude and angle modulation. Amplifiers, mixers, detectors, phase-lock loops, and the design of transmitters and receivers. Probability, random signals, optimal receivers, noise and performance analysis. Case studies including telephone, commercial radio, and television.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade  
Course Requirements: PREQ: ECE 1552; PROG: Swanson School of Engineering

**ECE 1473 - DIGITAL COMMUNICATION SYSTEMS**

Minimum Credits: 3  
Maximum Credits: 3  

Academic Career: Undergraduate 
Course Component: Lecture 
Grade Component: Letter Grade 
Course Requirements: PREQ: ECE 1552; PROG: Swanson School of Engineering

**ECE 1552 - SIGNALS AND SYSTEMS ANALYSIS**

Minimum Credits: 3  
Maximum Credits: 3  
Signal representation, continuous time systems, Fourier series, Fourier transform, laplace transform, discrete time systems, Fourier analysis of discrete time systems, z transform, the discrete Fourier transform. 

Academic Career: Undergraduate 
Course Component: Lecture 
Grade Component: Letter Grade 
Course Requirements: PREQ: MATH 0290 and ECE 0031; PROG: Undergraduate Swanson School of Engineering

**ECE 1562 - DIGITAL AND ANALOG FILTERS**

Minimum Credits: 3  
Maximum Credits: 3  
Active filter design; operational amplifier circuits; cascade design with first-order and biquad circuits; Butterworth and Chebyshev low pass filters; sensitivity and frequency transformations. Digital filter design; IIR filter design using bilinear transformation; window design of fir filters; realization of IRR and fir filters. 

Academic Career: Undergraduate 
Course Component: Lecture 
Grade Component: Letter Grade 
Course Requirements: PREQ: ECE 1552; PROG: Swanson School of Engineering

**ECE 1563 - SIGNAL PROCESSING LABORATORY**

Minimum Credits: 3  
Maximum Credits: 3  
Data acquisition and computer based measurements. Recursive and fir filters. Frequency response and filter implementations using FFT's. 

Academic Career: Undergraduate 
Course Component: Lecture 
Grade Component: Letter Grade 
Course Requirements: PREQ: ECE 1201 and 1552; PROG: Undergraduate Swanson School of Engineering

**ECE 1570 - SPEC TOPCS: SIGNALS & SYSTEMS**

Minimum Credits: 1  
Maximum Credits: 3  
An undergraduate course dealing with special topics of current interest in control, signal, and image processing, speech processing, and telecommunications.
ECE 1673 - LINEAR CONTROL SYSTEMS

Minimum Credits: 4
Maximum Credits: 4
Introduction to feedback control systems, mathematical models, second order systems response and identification, system types, steady-state errors, root locus analysis and design, bode plots, nyquist theory and frequency domain compensation techniques. Includes a laboratory.

ECE 1710 - POWER DISTRIBUTION SYSTEMS ENGINEERING AND SMART GRIDS

Minimum Credits: 3
Maximum Credits: 3
Review of power engineering fundamentals, load characteristics and distribution transformers, design of distribution substations, design considerations of primary and secondary systems, substation grounding, voltage drop and power loss, application of capacitors to distribution systems, distribution system voltage regulation and system software, smart grid technologies, energy management.

ECE 1750 - POWER ELECTRONICS CONVERSION THEORY

Minimum Credits: 3
Maximum Credits: 3

ECE 1769 - POWER SYSTEM ANALYSIS 1

Minimum Credits: 3
Maximum Credits: 3
An introduction to modern power systems and methods of analysis. Transmission lines, network representations, network solutions, balanced and unbalanced faults, real and reactive load flow study techniques, and basic concepts in stability and economic dispatch.

ECE 1770 - SPECIAL TOPICS: ELECTRONIC MICROPROCESSOR SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
An undergraduate course dealing with special topics of current interest in power.
ECE 1771 - ELECTRIC MACHINERY

Minimum Credits: 3
Maximum Credits: 3
Application of magnetostatics to the design of magnetic circuits, actuators, sensors and rotating electric machines. Performance characteristics of transformers, induction machines, synchronous machines and DC machines. Includes a laboratory.

ECE 1773 - POWER GENERATION, OPERATION, AND CONTROL

Minimum Credits: 3
Maximum Credits: 3
Area control error (ACE), automatic generation control (AGC), characteristics of power generation units, economic dispatch of generators, unit commitment, hydrothermal coordination and storage, interchange power, limited energy supply, optimal power flow, power system security, production cost modeling, state estimation, transmission system effects, unit commitment.

ECE 1775 - POWER QUALITY

Minimum Credits: 4
Maximum Credits: 4
An introductory power systems laboratory course providing hands-on experience covering various electric power topics. The course will be conducted in the Electric Power Systems Laboratory and will include lectures, analytical and simulation assignments, and laboratory procedures. Topics include: familiarization with lab equipment and safety, power system equipment, power conversion equipment, and electric machinery.

ECE 1885 - DEPARTMENTAL SEMINAR

Minimum Credits: 0
Maximum Credits: 0
Seminars are designed to acquaint the student with aspects of engineering that are not normally encountered in classes and school activities and include a wide range of topics such as the significance of engineering as a profession, and ethical problems in engineering and skills required for a successful engineering career.

ECE 1896 - SENIOR DESIGN PROJECT
Minimum Credits: 3
Maximum Credits: 3
A full-term engineering project involving definition, literature search, prototype design, construction, with written and oral reports. Senior design course.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: ECE 0031 or COE 0031 and (ECE 0257 or COE 0401 or CS 0401); PROG: Undergraduate Swanson School of Engineering

ECE 1898 - ENGINEERING PROJECT

Minimum Credits: 1
Maximum Credits: 6
An investigation of an approved engineering subject under the supervision of a faculty monitor. Must be approved in advance by the faculty monitor and the department chair.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU Elective Basis

ECE 2295 - SPECIAL TOPICS: ELECTRONICS

Minimum Credits: 3
Maximum Credits: 3
An MS level course in special topics of current interest in electronics.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Engineering students only.

ECE 2521 - ANALYSIS STOCHASTIC PROCESSES

Minimum Credits: 3
Maximum Credits: 3
Probability theory, random variables, sums and limits of random variable sequences, time and frequency domain, modeling of continuous and discrete random signals, least square estimation.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter GRD
Course Requirements: School of Engineering students only.

ECE 2523 - DIGITAL SIGNAL PROCESSING

Minimum Credits: 3
Maximum Credits: 3
Discrete time-signal processing, discrete fourier transform and fft implementation, design and stability considerations of fir and iir filters, filter implementation and finite register effects.
Academic Career: GRAD
Course Component: Lecture
Grade Component: GradLG/SU3
Course Requirements: School of Engineering students only.

EM 1102 - EMERGENCY MEDICINE TECHNICIAN

Minimum Credits: 4
Maximum Credits: 4
This course provides the learners with the cognitive knowledge and values to develop as an emergency medical professional at the basic life support level. This course meets all of the minimum training requirements as established by the U.S. Department of Transportation in the EMT, National Education Standards. This course provides the learner with the opportunity to develop basic life support psychomotor skills. Successful completion of this course makes the learner eligible to become certified by the National Registry of EMT's and the Pennsylvania Department of Health.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Sch Hlth & Rehabilitation Scs

EM 1104 - EMT CLINICAL

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: Letter Grade
Course Requirements: CREQ: EM 1102; PROG: Sch Hlth & Rehabilitation Scs

EM 1111 - FOUNDATIONS OF EMERGENCY CARE

Minimum Credits: 3
Maximum Credits: 3
This course focuses on pre-hospital assessment and therapeutic intervention of adult and pediatric patients with acute traumatic injury and includes advanced airway assessment and procedural intervention for patients with acute respiratory pathophysiology. Students will explore emergency medical services systems and appreciate their role and responsibility as pre-hospital practitioners. Learning strategies include scenario-based case presentations with a focus on critical thinking and decision-making. This course is paired with a required lab component.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Emergency Medicine (BS)

EM 1112 - PATHOPHYSIOLOGY

Minimum Credits: 3
Maximum Credits: 3
Introductory course in pathophysiology for entry level healthcare providers. This course focuses on human responses to illness expressed at the physiologic, pathophysiologic, experiential, and behavioral levels. Human responses are examined in terms of assessments appropriate to selected problems, rationale for medical interventions, and therapeutic effectiveness. Topics include: general principles of pathophysiology.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS)

EM 1113 - PHARMACOLOGY

Minimum Credits: 3
Maximum Credits: 3
Introduces students to the categories of pharmacological agents and the application of pharmacological concepts to clinical practice. Emphasis will be placed on understanding physiologic medication action. A separate medication lab is offered.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PLAN: Emergency Medicine (BS, BPH, BS-H)

**EM 1114 - MEDICATION ADMINISTRATION**

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
Practical skills lab designed to allow students to develop the psychomotor skills of medication administration. Skills include: phlebotomy, intramuscular and subcutaneous injections, IV cannulation, IV medication administration, inhalation, endotracheal and sublingual administration, and pharmacology math. This course also provides the students with the practical skills needed for Advanced Cardiac Life Support (ACLS) care.  
**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Emergency Medicine (BS)

**EM 1115 - INTRODUCTION TO PHYSICAL ASSESSMENT**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Designed to introduce students to the principles and techniques of physical examination. Students will be taught an organized systemic approach to assessment.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Emergency Medicine (BS)

**EM 1116 - PHYSICAL EXAM LAB**

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
Practical skills lab designed to assist in the development of psychomotor skills of patient assessment, airway management, ventilation and trauma care skills.  
**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Emergency Medicine (BS)

**EM 1117 - EMS OPERATIONS**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Designed to expose the paramedic student to various field operations procedures. Topics include: medical incident command, rescue awareness and operations, hazardous materials awareness and operations, crime scene awareness.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Emergency Medicine (BS, BPH, BS-H)

**EM 1122 - CARDIOLOGY AND RESPIRATORY**

1554
Minimum Credits: 3  
Maximum Credits: 3  
This course covers the specific pathophysiology, assessment, and management of the cardiac patient. Topics include 3 lead and 12 lead ECG interpretation, cardiac anatomy and physiology, patient assessment and management, ACLS, pharmacological, and other therapies. This class is offered with a required lab course.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Emergency Medicine (BS)

**EM 1123 - CARDIOLOGY LAB**

Minimum Credits: 1  
Maximum Credits: 1  
This lab section in conjunction with Assessment Based Management Lab provide case based learning for the students related to general adult emergencies. Students will participate in case based sessions that allow them to work on a simulated patient that is suffering from a specific illness or injury and allows the students to develop strong patient, resource, and scene management skills that they can take with them into their field practice. This lab helps to promote strong clinical decision making skills that will allow the students to function as a strong clinical provider in the field.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade  
Course Requirements: PLAN: Emergency Medicine (BS or BPH or BS-H)

**EM 1124 - ADULT MEDICAL EMERGENCIES**

Minimum Credits: 3  
Maximum Credits: 3  
This course focuses on pre-hospital assessment and therapeutic intervention of acute and chronic adult pathophysiology. Students will explore the different processes of patient care for special populations across the life span. Learning strategies include scenario-based case presentations with a focus on critical thinking and decision-making. This course is paired with a required lab component.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PLAN: Emergency Medicine (BS, BPH, BS-H)

**EM 1125 - OB/GYN, NEWBORN, AND PEDIATRIC CARE**

Minimum Credits: 3  
Maximum Credits: 3  
This course covers the specific pathophysiology, assessment and management of common medical and trauma conditions in pediatric patients. Additional information regarding obstetrics, neonates and gynecologic patients will be presented.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Emergency Medicine (BS, BPH, BS-H)

**EM 1126 - ASSESSMENT BASED MANAGEMENT**

Minimum Credits: 1  
Maximum Credits: 1  
This lab section in conjunction with Cardiology Lab provide case based learning for the students related to general adult emergencies. Students will participate in case based sessions that allow them to work on a simulated patient that is suffering from a specific illness or injury and allows the students to develop strong patient, resource, and scene management skills that they can take with them into their field practice. This lab helps to promote strong clinical decision making skills that will allow the students to function as a strong clinical provider in the field.
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade  
Course Requirements: PLAN: Emergency Medicine (BS or BPH or BS-H)

**EM 1131 - CLINICAL 1**

Minimum Credits: 4  
Maximum Credits: 4  
Designed to accompany the fall semester courses, these clinical rotations focus on the development and documentation of history taking and assessment skills. Additionally, psychomotor skill development in a clinical setting is emphasized.

Academic Career: Undergraduate  
Course Component: Clinical  
Grade Component: Letter Grade  
Course Requirements: PLAN: Emergency Medicine (BS, BPH, BS-H)

**EM 1132 - CLINICAL 2**

Minimum Credits: 4  
Maximum Credits: 4  
Designed to accompany the spring semester courses, these clinical rotations focus on the integration of psychomotor skills with assessment and history taking. In addition to scheduled rotations, students will spend the last weeks completing a summative field evaluation. This evaluation consists of 80 field hours with the student functioning as a primary care provider.

Academic Career: Undergraduate  
Course Component: Clinical  
Grade Component: Letter Grade  
Course Requirements: PLAN: Emergency Medicine (BS, BPH, BS-H)

**EM 1152 - ISSUES IN HEALTH CARE**

Minimum Credits: 2  
Maximum Credits: 2  
This course is designed to engage students in current aspects of healthcare impacting patients and healthcare practitioners. Topics are extremely diverse in assuring all possible domains of healthcare are addressed. Various methods of presentation are utilized in this course. Healthcare delivery at national and international models is explored.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Emergency Medicine (BS)

**EM 1153 - ISSUES IN HEALTH CARE EDUCATION**

Minimum Credits: 2  
Maximum Credits: 2  
Survey course designed to teach the principles of adult education, classroom management skills, selection of teaching aides and development of lesson plans. Students will function as teaching assistants in EMS education programs.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Emergency Medicine (BS)

**EM 1154 - HEALTH CARE RESEARCH**
Minimum Credits: 2
Maximum Credits: 2
This course provides an overview of basic concepts of research, including statistics, measurement and design. This course emphasizes the ability of the student to read and evaluate research papers.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS)

EM 1155 - LEGAL ISSUES IN HEALTH CARE

Minimum Credits: 2
Maximum Credits: 2
This course is meant to provide students with a survey of some of the major legal issues facing emergency medical services providers and administrators, and those who aspire to those positions. This course will focus on the practical issues confronting EMS organizations. Major areas to be addressed include the law of negligence and medical malpractice; consent and refusal of emergency care; "do not resuscitate" issues; the legal aspects of documentation; confidentiality and HIPAA; EMTALA and ER diversions; fraud and abuse; personnel management; OSHA; legal issues for non-profit EMS organizations; the basics of EMS reimbursement.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS)

EM 1158 - FINANCE AND ACCOUNTING FOR HEALTH CARE

Minimum Credits: 2
Maximum Credits: 2
Finance and Accounting provides an introduction to the basic concepts of accounting and financial management in health care. The course is geared for professionals who do not anticipate serving primarily in a financial management role. The concepts will be studied in the context of their practical application.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS, BS-H, BPH)

EM 1160 - PROFESSIONAL ISSUES

Minimum Credits: 3
Maximum Credits: 3
This course will provide the student with the tools necessary to promote the long-term viability of an EMS service. This course has been designed to prepare the student to be a leader of traditional or entrepreneurial ems opportunities. Guest speakers will be utilized for their expertise in the administration of EMS agencies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS, BPH, BS-H)

EM 1166 - SENIOR INTERNSHIP

Minimum Credits: 1
Maximum Credits: 1
The Internship is designed to allow students to gain valuable experience in an educational, clinical or administrative aspect of healthcare. Students are asked to find internships in their specific area of healthcare interest. The internship can take place domestically or internationally.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS, BPH, BS-H)

EM 1168 - LEADERSHIP IN HEALTHCARE

Minimum Credits: 3
Maximum Credits: 3
Thorough reading, review, and discussion of germane reference materials, this class will explore the components of leadership for industry, organization, and individual as applicable to US Health Care in general and more specifically Emergency Medical Services as part of the health care system. 
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS, BPH, BS-H)

EM 1169 - CRITICAL CARE MANAGEMENT

Minimum Credits: 4
Maximum Credits: 4
This course focuses on advanced assessment and therapeutic intervention common in the critical care setting for both adult and pediatric patients. Emphasis is placed on continuum of critical care interventions during inter-facility transport. The course follows the ASTNA core curriculum outline, the PA DoH Pennsylvania Air Ambulance Transport Educational Program guidelines and is approved for continuing education by the IBSC. Topics highlighted include intra-aortic balloon pump management, hemodynamic monitoring and pharmacology, and initiation and maintenance of the mechanically ventilated patient. Learning strategies include lecture with integrated scenario-based case presentations and a focus on critical thinking and decision-making.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS, BPH, BS-H)

EM 1170 - CRITICAL CARE PARAMEDIC 1

Minimum Credits: 3
Maximum Credits: 3
This course focuses on advanced assessment and therapeutic intervention common in the critical care setting for both adult and pediatric patients. Emphasis is placed on continuum of critical care interventions during inter-facility transport. The course follows the ASTNA core curriculum outline, the PA DoH Pennsylvania Air Ambulance Transport Educational Program guidelines and is approved for continuing education by the IBSC. Topics highlighted include body systems assessment, analysis of laboratory diagnostics, hemodynamic monitoring and pharmacology, and chemically facilitated management of the crash airway. Learning strategies include lecture with integrated scenario-based case presentations and a focus on critical thinking and decision-making.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: School of Health and Rehabilitation Sciences students only.

EM 1171 - CRITICAL CARE PARAMEDIC 2

Minimum Credits: 3
Maximum Credits: 3
This course focuses on advanced assessment and therapeutic intervention common in the critical care setting for both adult and pediatric patients. Emphasis is placed on continuum of critical care interventions during inter-facility transport. The course follows the ASTNA core curriculum outline, the PA DoH Pennsylvania Air Ambulance Transport Educational Program guidelines and is approved for continuing education by the IBSC. Topics highlighted include intra-aortic balloon pump management, advanced shock management, and initiation and maintenance of the mechanically ventilated patient.
ventilated patient. Learning strategies include lecture with integrated scenario-based case presentations and a focus on critical thinking and decision-making. EM1170 is a pre-requisite course.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PLAN: Emergency Medicine (BS)

**EM 1172 - ISSUES IN HEALTH CARE - WEB**

- **Minimum Credits:** 2  
- **Maximum Credits:** 2  
This course is designed to engage students in current aspects of healthcare impacting patients and healthcare practitioners. Topics are extremely diverse in assuring all possible domains of healthcare are addressed. Various methods of presentation are utilized in this course. Healthcare delivery at national and international models is explored.  
**Academic Career:** Undergraduate  
**Course Component:** Mass Media  
**Grade Component:** Letter Grade

**EM 1173 - ISSUES IN HEALTH CARE EDUCATION - WEB**

- **Minimum Credits:** 2  
- **Maximum Credits:** 2  
Survey course designed to teach the principles of adult education, classroom management skills, selection of teaching aides and development of lesson plans. Students will function as teaching assistants in EMS education programs.  
**Academic Career:** Undergraduate  
**Course Component:** Mass Media  
**Grade Component:** Letter Grade

**EM 1174 - HEALTHCARE RESEARCH - WEB**

- **Minimum Credits:** 2  
- **Maximum Credits:** 2  
This course provides an overview of basic concepts of research, including statistics, measurement and design. This course emphasizes the ability of the student to read and evaluate research papers.  
**Academic Career:** Undergraduate  
**Course Component:** Mass Media  
**Grade Component:** Letter Grade

**EM 1175 - LEGAL ISSUES IN HEALTH CARE - WEB**

- **Minimum Credits:** 2  
- **Maximum Credits:** 2  
This course is meant to provide students with a survey of some of the major legal issues facing emergency medical services providers and administrators, and those who aspire to those positions. This course will focus on the practical issues confronting EMS organizations. Major areas to be addressed include the law of negligence and medical malpractice; consent and refusal of emergency care; "do not resuscitate" issues; the legal aspects of documentation; confidentiality and HIPAA; EMTALA and ER diversions; fraud and abuse; personnel management; OSHA; legal issues for non-profit EMS organizations; the basics of EMS reimbursement.  
**Academic Career:** Undergraduate  
**Course Component:** Mass Media  
**Grade Component:** Letter Grade

**EM 1176 - SENIOR INTERNSHIP-WEB**
The Internship is designed to allow students to gain valuable experience in an educational, clinical or administrative aspect of healthcare. Students are asked to find internships in their specific area of healthcare interest. The internship can take place domestically or internationally.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Letter Grade

**EM 1177 - SENIOR SEMINAR**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
Senior Seminar requires students to create a scholarly paper and presentation. Students are permitted to utilize the information gained during their internship if they desire. Students can also develop new materials based upon an approved topic in any healthcare area of interest to them.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Emergency Medicine (BS, BPH, BS-H)

**EM 1178 - LEADERSHIP IN HEALTH CARE-WEB**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Thorough reading, review and discussion of germane reference materials, this class will explore the components of leadership for industry, organization and individual as applicable to US Health Care in general and more specific Emergency Medical Services as part of the health care system.  
**Academic Career:** Undergraduate  
**Course Component:** Mass Media  
**Grade Component:** Letter Grade

**EM 1179 - HEALTH CARE MANAGEMENT - WEB**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
The purpose of the course is to provide an introduction to the basic concepts of managing in organizations with a particular focus on healthcare organizations. The concepts will be studied in the context of their practical application.  
**Academic Career:** Undergraduate  
**Course Component:** Mass Media  
**Grade Component:** Letter Grade

**EM 1180 - HEALTH CARE MANAGEMENT**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
The purpose of the course is to provide an introduction to the basic concepts of managing in organizations with a particular focus on healthcare organizations. The concepts will be studied in the context of their practical application.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Emergency Medicine (BS, BPH, BS-H)

**EM 1181 - PROFESSIONAL ISSUES-WEB**
Minimum Credits: 3
Maximum Credits: 3
This course will provide the student with the tools necessary to promote the long-term viability of an EMS service. This course has been designed to prepare the student to be a leader of traditional or entrepreneurial EMS opportunities. Guest speakers will be utilized for their expertise in the administration of EMS agencies.
Academic Career: Undergraduate
Course Component: Mass Media
Grade Component: Letter Grade

EM 1182 - CRITICAL CARE MANAGEMENT - WEB

Minimum Credits: 4
Maximum Credits: 4
This course focuses on advanced assessment and therapeutic intervention common in the critical care setting for both adult and pediatric patients. Emphasis is placed on continuum of critical care interventions during inter-facility transport. The course follows the ASTNA core curriculum outline, the PA DoH Pennsylvania Air Ambulance Transport Educational Program guidelines and is approved for continuing education by the IBSC. Topics highlighted include intra-aortic balloon pump management, hemodynamic monitoring and pharmacology, and initiation and maintenance of the mechanically ventilated patient. Learning strategies include lecture with integrated scenario-based case presentations and a focus on critical thinking and decision-making.
Academic Career: Undergraduate
Course Component: Mass Media
Grade Component: Letter Grade

EM 1183 - FINANCE AND ACCOUNTING FOR HEALTH CARE - WEB

Minimum Credits: 2
Maximum Credits: 2
Finance and Accounting provides an introduction to the basic concepts of accounting and financial management in health care. The course is geared for professionals who do not anticipate serving primarily in a financial management role. The concepts will be studied in the context of their practical application.
Academic Career: Undergraduate
Course Component: Mass Media
Grade Component: Letter Grade
Course Requirements: School of Health and Rehabilitation Sciences students only.

EM 1184 - SENIOR SEMINAR - WEB

Minimum Credits: 1
Maximum Credits: 1
Senior Seminar requires students to create a scholarly paper and presentation. Students are permitted to utilize the information gained during their internship if they desire. Students can also develop new materials based upon an approved topic in any healthcare area of interest to them.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Letter Grade

EM 1185 - BEYOND THE BODY - WEB

Minimum Credits: 3
Maximum Credits: 3
This course was designed to introduce clinicians and health administrators to variables that influence health beyond behaviors, genes and germs. This course will introduce the "social ecology" model that addresses the broader social, environmental and policy factors that influence our health, which are known as "health determinants".
Academic Career: Undergraduate
EM 1186 - CERTIFIED AMBULANCE CODER-WEB

Minimum Credits: 1
Maximum Credits: 1
This course is designed to provide the student with a comprehensive understanding of the complex rules and requirements related to effective and compliant ambulance billing. The course focuses on a baseline of critical knowledge and commitment to excellence necessary to be a well-informed, conscientious and compliant ambulance billing professional.
Academic Career: Undergraduate
Course Component: Mass Media
Grade Component: Letter Grade

EM 1187 - ORGANIZATIONAL THEORY-WEB

Minimum Credits: 3
Maximum Credits: 3
Through didactic and practical sessions, students will have the opportunity to discover organizational theory and to evaluate an EMS agency. Through this course students will learn about the 11 components of an EMS system and how to use them to evaluate an EMS system.
Academic Career: Undergraduate
Course Component: Mass Media
Grade Component: Letter Grade

EM 1190 - CRITICAL CARE MANAGEMENT 1-WEB

Minimum Credits: 3
Maximum Credits: 3
This course deployed in a web-based format focuses on advanced assessment and therapeutic intervention common in the critical care setting for both adult and pediatric patients. Emphasis is placed on continuum of critical care interventions during inter-facility transport. The course follows the ASTNA core curriculum outline, elements of the PA DoH Pennsylvania Air Ambulance Transport Educational Program guidelines and is approved for continuing education by the IBSC. Topics highlighted include body systems assessment, analysis of laboratory diagnostics, hemodynamic monitoring and pharmacology, and chemically facilitated management of the crash airway. Learning strategies include lecture with integrated scenario-based case presentations and a focus on critical thinking and decision-making.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

EM 1198 - INTERNATIONAL STUDIES

Minimum Credits: 1
Maximum Credits: 6
This course is designed for international emergency medicine students. It provides international emergency medicine students an opportunity to explore an area of emergency medicine that is of particular interest to them.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PLAN: Emergency Medicine (BS)

EM 1199 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Provides students an opportunity to explore in depth an area of particular interest to them. It is the student's responsibility to find a faculty member
willing to undertake such a tutorial.

**EM 1250 - INTRODUCTION TO COMMUNITY HEALTH**

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade

**Minimum Credits:** 2  
**Maximum Credits:** 2  
The role of paramedics in the healthcare system is evolving in many parts of the country to include helping patients avoid unnecessary 911 calls and hospitalizations. This introductory course will prepare the paramedic to function as a community paramedic. This course will describe the difference between traditional ems and community paramedic assessments; introduce therapeutic communication techniques; describe mental and behavioral health issues and their effect on chronic disease management; review professional boundaries and provider wellness techniques; and review potential patient populations that could be helped through these new services.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**EM 1251 - MOBILE INTEGRATED HEALTHCARE**

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**Minimum Credits:** 2  
**Maximum Credits:** 2  
Part two of the community paramedic introductory course will introduce therapeutic communication techniques that are essential for chronic disease management and the coordination of services needed to avoid the unnecessary utilization of EMS and hospital services. This course will discuss the business models used across the country for community paramedicine programs as well as how to design a program, describe documentation methods used and how to effectively become a patient advocate to help navigate the patient through the changing health care system.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**EM 1260 - COGNITIVE PSYCHOLOGY OF DECISION MAKING**

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**Minimum Credits:** 2  
**Maximum Credits:** 2  
Healthcare providers make dozens of clinical decisions every day. Errors in cognitive processes have been determined to be one of the most common causes of preventable death and disability in this country. The goal of this class is to examine the current science of decision making and the treats to optimal decisions. Students will learn to recognize system I and system II thinking and the benefits and limitations of each. Unconscious cognitive biases and heuristics that are commonly relied upon in everyday as well as professional decisions will be analyzed. The class will be taught in seminar fashion with active learning and discussion.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**ENGR 0005 - INTRODUCTION TO TECHNOLOGY IN INTERNATIONAL CONTEXT**

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PROG: Swanson School of Engineering

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Often engineering and science are considered to be culturally independent. This, however turns out not to be the case. This course examines the constructs of science and engineering education, the practice of engineering, and industry and their underlying cultural bases. When offered off-campus in a foreign country, this course will also include site visits and field work.
ENGR 0011 - INTRO TO ENGINEERING ANALYSIS

Minimum Credits: 3  
Maximum Credits: 3  
Introduces students to basic topics in engineering, the role of the computer in engineering, ill structured problem-solving and report writing. The course includes material on the use of Unix, HTML, spread sheets, and MATLAB. Data analysis and curve fitting is done in both MATLAB and Excel. The writing component includes four detailed reports and includes an oral presentation. The course goals are: to introduce the fundamentals of what engineering is, what engineers do, why a diverse work force is needed and what values come with working in a group environment; to introduce the required library research skills and communication skills used by all engineers; to introduce the role of the computer in engineering problem solving, including the basic analytical, programming design, graphical, and problem solving skills used by most engineers in their profession; and to provide an overview of how material in the basic sciences and mathematics is applied by engineers to solve practical problems of interest to society.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: CREQ: ENGR 0081 or ENGR 0181; PROG: School of Engineering

ENGR 0012 - INTRO TO ENGINEERING COMPUTING

Minimum Credits: 3  
Maximum Credits: 3  
Introduces students to social topics in engineering, the role of the computer in engineering, ill-structured problem-solving and report writing. The course includes material on the use of MATLAB and C++. Students learn the fundamentals of computing in engineering, including program design, program development, and debugging. Applications to problems in engineering analysis with topics selected from ENGR 0011. The writing component includes four detailed reports and includes an oral presentation.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: ENGR 0011 (MIN GRADE 'C'); CREQ: MATH 0220 or 0230 or 0235 or 0240 or 0245 or 0280 or 0290; PROG: School of Engineering

ENGR 0015 - INTRODUCTION TO ENGINEERING ANALYSIS

Minimum Credits: 3  
Maximum Credits: 3  
Introduces students to basic topics in engineering, the role of the computer in engineering, ill-structured problem-solving and report writing. The course includes material on the use of UNIX, HTML, spread sheets, and MATLAB. Data analysis and curve fitting is done in both MATLAB and Excel. The writing component includes four detailed reports and includes an oral presentation. The course goals are: to introduce the fundamentals of what engineering is, what engineers do, why a diverse work force is needed and what values come with working in a group environment; to introduce the required library research skills and communication skills used by all engineers; to introduce the role of the computer in engineering problem solving, including the basic analytical, programming design, graphical, and problem solving skills used by most engineers in their profession; and to provide an overview of how material in the basic sciences and mathematics is applied by engineers to solve practical problems of interest to society.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: CREQ: (MATH 0220 or 0235) and (PHYS 0174 or 0475)

ENGR 0016 - INTRODUCTION TO ENGINEERING COMPUTING

Minimum Credits: 3  
Maximum Credits: 3  
Introduces students to social topics in engineering, the role of the computer in engineering, ill-structured problem-solving and report writing. The course includes material on the use of MATLAB and C++. Students learn the fundamentals of computing in engineering, including program design, program development, and debugging. Applications to problems in engineering analysis with topics selected from ENGR 0015. The writing component includes four detailed reports and may include an oral presentation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ENGR 0011 or 0015) and (MATH 0220 or 0235) and (PHYS 0174 or 0475) and PREQ or CREQ: (ENGCMP 0200 or 0203 or 0205 or 0207 or 0208 or 0250 or 0004 0006 0020) or (FP 0003 or 0006) or ENG 0102; CUM GPA 2.0 or greater

ENGR 0020 - PROBABILITY AND STATISTICS FOR ENGINEERS 1

Minimum Credits: 4
Maximum Credits: 4
An introductory course in statistics. Topics covered include: data analysis, probability, random variables, selected discrete and continuous probability distributions, one sample and two sample estimation, hypothesis testing, experiments with two factors and introduction to regression analysis.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0150 or 0230 or 0231 or 0235; PROG: Swanson School of Engineering

ENGR 0022 - MATERIALS STRUCTURE AND PROPERTIES

Minimum Credits: 3
Maximum Credits: 3
An introduction to the basic concepts of materials science and engineering. The concepts of atomic, crystal, micro- and macro-structure, their control and effects on chemical, electrical, magnetic, optical, and mechanical properties. Modification of properties by heat treatment and control of processing. Fundamental considerations in materials selection.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: (MATH 0150 or 0230 or 0231 or 0235) and (PHYS 0150 or 0174 or 0201 or 0475); PROG: School of Engineering

ENGR 0023 - PLUS 3 COSTA RICA

Minimum Credits: 3
Maximum Credits: 3
The course involves lectures, company visits and sightseeing, and culminates in a research paper and presentation that focuses on a global industry and its value chain.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 0024 - INTERNATIONAL FIELD PROJECT - CHINA

Minimum Credits: 3
Maximum Credits: 3
The course involves lectures, company visits and sightseeing, and culminates in a research paper and presentation that focuses on a global industry and its value chain.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 0025 - INT'L FIELD PROJ-CZECH REPUBLIC

Minimum Credits: 3
Maximum Credits: 3
The course involves lectures, company visits and sightseeing, and culminates in a research paper and presentation that focuses on a global industry
The course involves lectures, company visits and sightseeing, and culminates in a research paper and presentation that focuses on a global industry and its value chain.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 0027 - INTERNATIONAL FIELD PROJECT- FRANCE

Minimum Credits: 3
Maximum Credits: 3
The course involves lectures, company visits and sightseeing, and culminates in a research paper and presentation that focuses on a global industry and its value chain.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

ENGR 0028 - ENGR+2: INT'L FIELD PROJ - CHILE

Minimum Credits: 2
Maximum Credits: 2
Engr+2 is an optional two-credit study abroad opportunity offered. In 2003 the course will involve a field study trip to Santiago Chile. The course involves lectures, company visits and sightseeing, and culminates in a research paper and presentation that focuses on a global industry and its value chain.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 0029 - INT'L FIELD PROJECT - CHILE

Minimum Credits: 1
Maximum Credits: 1
This one-credit project is for students who participated in the Chile summer program. Students will work in small groups to design, coordinate and create web pages. The project entails video processing and editing, source searching on the internet, and interviewing university experts on Chile. A short paper connecting the interviews and the special trading status that the US gave to Chile recently will also be required.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

ENGR 0031 - PLUS 3 ITALY

Minimum Credits: 3
Maximum Credits: 3
The course involves lectures, company visits and sightseeing, and culminates in a research paper and presentation that focuses on a global industry and its value chain.
**ENGR 0032 - INTERNATIONAL FIELD PROJECT - BRAZIL**

Minimum Credits: 3  
Maximum Credits: 3  
The course involves lectures, company visits and sightseeing, and culminates in a research paper and presentation that focuses on a global industry and its value chain.

**ENGR 0033 - INTERNATIONAL FIELD PROJECT - VIETNAM**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**ENGR 0034 - PITT IN FLORENCE: ENGINEERING OF THE RENAISSANCE**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**ENGR 0081 - FRESHMAN ENGINEERING SEMINAR 1**

Minimum Credits: 0  
Maximum Credits: 0  
An in-depth orientation in the various areas of engineering and the related fields of employment. Includes small group meetings with departmental representatives and special freshman academic advisors. A formal departmental choice is made at the conclusion of these courses.

**ENGR 0082 - FRESHMAN ENGINEERING SEMINAR 2**

Minimum Credits: 0  
Maximum Credits: 0  
An in-depth orientation in the various areas of engineering and the related fields of employment. Includes small group meetings with departmental representatives and special freshman academic advisors. A formal departmental choice is made at the conclusion of these courses.
ENGR 0087 - TRANSFER SEMINAR

Minimum Credits: 0
Maximum Credits: 0
A 9 week seminar course for first semester regional and external engineering transfer students. The course discusses the transition to the Swanson School of Engineering and resources available to students at the University of Pittsburgh.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

ENGR 0088 - LEARNING AND COUNSELING

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

ENGR 0089 - COUNSELING

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

ENGR 0090 - SWANSON SUCCESS PROGRAM: A FRAMEWORK FOR ACADEMIC SUCCESS

Minimum Credits: 0
Maximum Credits: 0
The Swanson success class provides students with a series of academically-focused workshops critical to success within the Swanson School of Engineering and at the University of Pittsburgh. In this course, students will explore a variety of personal development topics including goal-setting, time prioritizing, motivation, and learning strategies. Students who invest the time and energy into this course, which is just one component of the student retention program, can expect to enhance their academic and personal efficiency as well as their performance in the classroom.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: H/S/U Basis

ENGR 0131 - STATICS FOR CIVIL & ENVRL ENGNR

Minimum Credits: 3
Maximum Credits: 3
A basic course in statics. Utilizing the free-body diagram, the course covers forces and equilibria of particles, rigid bodies, surfaces, trusses, beams, cables, and other basic structural elements. Use is made of computers for problem solving.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHYS 0104 or 0150 or 0174 or 0201; PROG: Swanson School of Engineering

ENGR 0135 - STATICS & MECHC OF MATERIALS 1
Minimum Credits: 3  
Maximum Credits: 3  
First of a two course sequence covering statics and strength of materials. Topics covered include: concurrent force systems, equilibrium, axial loading, stress, strain, deformation, moments, equivalent systems, centroids, centers of mass, and distributed loads, free-body diagrams, equilibrium of rigid and deformable bodies, plane trusses, frames and machines, equilibrium in 3D, torsion and friction. Use is made of computers for problem solving.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (MATH 0150 or 0230 or 0231 or 0235) and (PHYS 0150 or 0174 or 0201 or 0475); PROG: School of Engineering

ENGR 0141 - MECHC OF MATLS CVL & ENV ENGR

Minimum Credits: 3  
Maximum Credits: 3  
An introductory course in the mechanics of deformable bodies, with special application to the range of topics needed by civil engineers. The course material covers internal strains, stresses and deformations which occur when a structure is subjected to applied loads. Problems with tie-in to practical design issues will be covered.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ENGR 0131 or 0135 or ET 0051; PROG: Swanson School of Engineering

ENGR 0145 - STATICS & MECHC OF MATERIALS 2

Minimum Credits: 3  
Maximum Credits: 3  
Second of a two course sequence covering statics and strength of materials. Topics include: flexure; second moment of areas, shear force and bending moment diagrams, composite beams, shearing stresses, beam deflections, energy methods, Castigliano's methods, moment area method, combined static loading and columns.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (ENGR 0135 or ET 0051); PROG: School of Engineering

ENGR 0151 - DYNAMICS CIVIL & ENVRN ENGNRS

Minimum Credits: 3  
Maximum Credits: 3  
A basic course in dynamics. Utilizing the Newtonian mechanics of particles, the course covers kinematics and kinematics of particles, kinetics of systems of particles, work and energy, introduction to vibration, single-degree-freedom systems, and two-degrees-of-freedom systems. Applications of dynamics in civil engineering problems. Use is made of computer solution to a two-story building vibration.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (ENGR 0141 or 0145 or ET 0053) and (MATH 0250 or 0290 or 1035 or 0202); PROG: Swanson School of Engineering

ENGR 0182 - FRESHMAN SEMINAR 2 - HONORS

Minimum Credits: 0  
Maximum Credits: 0  
Continuation of ENGR 0181 honors freshman seminar. Provides students in the Fessenden Honors in Engineering Program (FHEP) with a vehicle for academically ambitious engineering students to meet each other, and research an in-depth term paper that will be presented at the freshman
conference at the end of the term. A formal department choice is made at the conclusion of this semester.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** H/S/U Basis  
**Course Requirements:** PREQ: ENGR 0081 or 0181; PROG: Undergraduate Swanson School of Engineering

### ENGR 0240 - NANOTECHNOLOGY AND NANO-ENGINEERING

**Minimum Credits:** 3  
**Maximum Credits:** 3

This research-oriented course is a multidisciplinary course taught by a faculty team including a professor of electrical engineering and a professor of chemistry. The course introduces nanoscale devices created from a range of nanomaterials including carbon nanotubes (CNTS), nanoparticles (NPS), and nanowires (NWS). Theories of operation, fabrication techniques and applications of Nano devices will be discussed. The course combines lecture, laboratory work, and web-supported project-based learning.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (MATH 0230 or 0235 or 0150 or 0221) and [PHYS 0175 or 0476 or (0201 and 0203) or (0150 and 0151)]; PROG: Swanson School of Engineering

### ENGR 0241 - FABRICATION AND DESIGN IN NANOTECHNOLOGY

**Minimum Credits:** 3  
**Maximum Credits:** 3

This overview course examines approaches to top-down and bottom-up nanofabrication and device manufacture; engineering design with nanomaterials, components, and systems; case studies of cutting-edge nanotechnologies (e.g., The 'ipod' microdrive, nanoparticle drug delivery, etc.), Commercialization, intellectual property, and venture capital; seminar series.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (PHYS 0175 or 0476 or 0770 or 0152 or 0202) and (CHEM 0120 or 0720 or 0770 or 0970 or 0102 or 0112); PROG: Swanson School of Engineering

### ENGR 0501 - MUSIC ENGINEERING LABORATORY

**Minimum Credits:** 1  
**Maximum Credits:** 1

A course directed toward development of basic skills in recording engineering through expanded understanding of the science and engineering of music. The course will use the music engineering laboratory (MEL) located in Benedum hall. The MEL is a state of the art sound recording facility with research and educational capabilities for sound recording and music engineering. Students are expected to have prior musical experience, working knowledge of Fourier transforms, and working knowledge of basic electronics. Topics covered: recording engineering (microphones, amplifiers, and mixing, filtering, special effects). Physics, mathematics, and psychophysics of sound and music (acoustics, speech and singing, hearing, pitch, stereo perception). Musical instrument function (mechanical and electronic)

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### ENGR 0711 - HONORS ENGINEERING ANALYSIS AND ENGINEERING COMPUTING

**Minimum Credits:** 3  
**Maximum Credits:** 3

This is an accelerated course in computer fundamentals and engineering applications. The material of ENGR 0711 covers the material in both ENGR 0011 and ENGR 0012. The course is at an accelerated pace and then a variety of engineering design analysis and solution techniques are presented. It
introduces students to basic topics in engineering, the role of the computer in engineering, ill-structured problem-solving and report writing. The course includes material on the use of Unix, HTML, spreadsheet, MATLAB and C++. Students learn fundamentals of computing in engineering including program design, program development, and debugging. Applications to problems in engineering analysis are included in the course. The writing component includes four detailed reports and includes an oral presentation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0220; COREQ: (MATH 0230 or 0235 or 0240 or 0290) and ENGR 0081; PROG: Swanson School of Engineering; Minimum GPA 3.25

ENGR 0712 - ADVANCED ENGINEERING APPLICATIONS FOR FRESHMAN

Minimum Credits: 3
Maximum Credits: 3
This is an honors course and a continuation of ENGR 0711. Students will be introduced to engineering research and various special topics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0711; PROG: Undergraduate Swanson School of Engineering

ENGR 0715 - ENGINEERING APPLICATIONS FOR SOCIETY

Minimum Credits: 3
Maximum Credits: 3
This service learning course will initially focus on applications in medicine and rehabilitation treatment. Students will work in teams as they address a critical clinical problem, examining issues from both the patient and physician perspectives. Future years will introduce environmental and sustainability problems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0711; PROG: Undergraduate Swanson School of Engineering

ENGR 0716 - ART OF HANDS-ON SYSTEM DESIGN AND ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Engineering is fundamentally a creative process in which ideas are generated and transformed into new systems and devices in the world to meet human needs. The term engineer shares its origins with ingenious: one definition of engineer is 'a skillful inventor.' In this course, we will explore tools and techniques for inventing, designing and prototyping systems. Through discussion, small-team activities, workshops and hands-on projects, students will obtain an introduction to design thinking, 'maker culture' and systems engineering. We will explore user-centric design principles; sketch modeling; basic building elements for systems such as sensors, computer controllers, actuators and displays; materials and methods for prototyping; and ways to analyze and troubleshoot systems. Students will gain an introduction to 'smart systems': automated systems that can sense the world and automatically respond in useful ways. We will also focus on the user interface: how to create control and display interfaces that enhance users' ability to operate systems effectively and efficiently.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0711; CREQ: ENGR 0082; PLAN: Undeclared

ENGR 1010 - COMMUNICATION SKILLS FOR ENGINEERS

Minimum Credits: 3
Maximum Credits: 3
Utilizing a variety of spoken, written, and audio-video activities, the students learn how to give instructions, use feedback, listen, conduct the job and
appraisal interview. Run meetings, use groups, make presentations, manage crises...Most of the skills they need to strengthen their personal, interpersonal, group and organizational communicative skills. The instructing-learning process emphasizes motivation, concentration, participation, organization, comprehension, repetition, articulateness, and confidence.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

**ENGR 1030 - ENGINEERING FOR HUMANITY SERVICE LEARNING PROJECT**

- **Minimum Credits:** 1  
- **Maximum Credits:** 3  

A service learning project in which social and/or environmental sustainability is a core thrust. The project is guided by an approved member of faculty from the Swanson school of engineering and satisfies a requirement of the engineering for humanity certificate program. The project can be international or based within the US and is subject to pre-approval.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

**ENGR 1050 - PRODUCT REALIZATION**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This interdisciplinary course will focus on product analysis, product redesign and product development. Student teams will work with industrial sponsors to develop product plans for emerging and existing products.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**ENGR 1060 - SOCIAL ENTREPRENEURSHIP- ENGINEERING FOR HUMANITY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

The course will explore the concepts of social entrepreneurship through the three tenets of sustainability: environment, economy, and equity in the context of complex or 'wicked' problems. An introduction will provide a foundation in sustainability and social entrepreneurship while exploring the impact of innovative business models, such as disruptive innovation and Prahalad and Hart's fortune at the bottom of the pyramid. Additional class time will explore different examples and challenges in the developed and developing worlds. Through weekly readings, the course will focus on classroom discussions about the tenets of sustainability and the relevance of engineering in crafting 'solutions'. The course project will provide students with an opportunity to work with a multi-disciplinary team to design an engineering-based business plan targeting a specific challenge either locally or in the developing world.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

**ENGR 1061 - INTRAPRENEURSHIP: ENTREPRENEURSHIP WITHIN THE CORPORATION**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This course explores the developing practice of intrapreneurship which is defined as the application of entrepreneurial principles in a corporate environment for the creation of new products and businesses. The focus will be on providing the student with the needed awareness of cultural and political barriers while providing a specific tool set targeted at maximizing new business as well as career success. The course is designed for junior and senior engineering students who have already had some work experience.
ENGR 1062 - START UP FUNDAMENTALS

Minimum Credits: 3
Maximum Credits: 3
This course is offered within the Swanson School of Engineering to undergraduate and graduate students. At the undergraduate level, the class is part of the new Certificate in Innovation, Product Design and Entrepreneurship. The class is designed to introduce the student to the core business concepts behind innovation and entrepreneurship. The class is highly interactive, and students will be required to participate in groups and individually. Grading is heavily weighted around participation in the group project which will be ongoing throughout the semester. The class is taught by Babs Carryer, Director of Education & Outreach, Innovation Institute at Pitt. Guest speakers, who are experts in their fields, will supplement the core teaching. Topics covered will include: ideation, problem/solution, market opportunity, competitive analysis, customer discovery, pitching, funding, finance, legal issues, team building, and innovation within existing companies.

ENGR 1065 - NANOMANUFACTURING & NANOMATERIALS FOR PHOTOVOLTAICS

Minimum Credits: 3
Maximum Credits: 3
This course aims to prepare the undergraduate students in the development of low-cost, high-efficiency solar cells. Students will 1. Apply nanomanufacturing and nanomaterial concepts to photovoltaic application, 2. Learn how to use instruments for synthesis and characterization of nanomaterials and photovoltaic devices, 3. Examine the social implication of nanotechnology and photovoltaics, and 4. Practice problem solving and engineering design skills within a collaborative team. We will cover solar cell fundamentals, low cost solar cells, and high efficiency photovoltaic systems.

ENGR 1066 - INTRODUCTION TO SOLAR CELLS AND NANOTECHNOLOGY

Minimum Credits: 3
Maximum Credits: 3
Introduction to solar cells and nanotechnology this course aims to prepare Undergraduate students in the design and development of low-cost, high-efficiency solar cells. Students will learn the basics of solar cells, introduce themselves to nanotechnology and how this may enable next-generation solar cells, learn how to use instruments for synthesis and characterization of nanomaterials and solar cells, examine the social implication of nanotechnology and solar cells, and practice problem solving and engineering design skills within a collaborative team. Portions of the class will be flipped (video lectures at home and assignments in class) in order to facilitate an active and engaged learning process.

ENGR 1070 - POWER GENERATION FROM THE GROUND UP

Minimum Credits: 3
Maximum Credits: 3
More than 50 percent of today's power generation and consumption worldwide relies on fossil energy sources, i.e. coal, natural gas, and oil, all 'from the ground up,' and this trend is expected to continue for many decades. This course will address key technical, environmental and societal issues associated with today's fossil energy supplies, exploration, recovery (e.g., horizontal drilling and hydraulic fracturing) energy conversion, and power
generation systems. Based on the fundamental principles of thermodynamics, student will understand how a variety of physical components can be combined into practical power generation systems. Both vapor power cycles, where the primary motivating force is phase change, and gas power cycles, where combustion plays a more significant role, will be explained, analyzed, compared, and contrasted. Once the overall system performance is understood, the detailed mechanics of components such as heat exchangers, pumps, and turbines will be discussed. In addition, the role of advanced power generating technologies, such as fuel cells, will be examined. The course will be concluded with an overview of carbon management strategy, particularly in capture and sequestration of carbon-dioxide.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

ENGR 1071 - ELECTRICAL POWER TRANSMISSION, DISTRIBUTION AND GRID TECHNOLOGY

Minimum Credits: 3
Maximum Credits: 3
This is an overview course designed to introduce students to electric power transmission and distribution grid technologies dedicated to reliably, efficiently, economically, and safely managing electric power across utility networks. The course will cover the application of various grid technologies from power generation through power consumption including transmission networks, grid automation, power electronics systems, communications and control, protection, grid operations, grid connectivity, renewable energy integration, cyber security, and other emerging areas, as well as an introduction to power utility markets, business processes, and policy/regulation. Students will gain an understanding of how the broad spectrum of power grid technologies is integrated into the electrical energy industry, with an emphasis on transmission and distribution systems at the electric utility level. Since nuclear power often plays a significant role for near-term and future smart grid strategy in many developed countries, such as France, Japan and South Korea, part of this course will be directed to an overview of today's nuclear power generation and its relation to grid technologies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

ENGR 1080 - LEAN LAUNCHPAD: EVIDENCE-BASED ENTREPRENEURSHIP

Minimum Credits: 3
Maximum Credits: 3
Conventional wisdom regarding starting a business is dead wrong. This conclusion led Steve Blank and others to develop the lean startup method, an approach for systematically exploring the business model needed to make an idea into a success. In Blank's own words: 'existing companies execute a business model, startups search for one. This distinction shapes the lean definition of a startup: a temporary organization designed to search for a repeatable and scalable business model.' In this course, we discuss the basic elements of the lean startup method and apply them to the domain of engineering product and customer development. Students are expected to come to the class with their own idea(s) for potential product offering(s), which they will then test using the lean startup approach over the course of the term.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

ENGR 1090 - ENGINEERING COOPERATIVE PROGRAM

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Basis

ENGR 1090J - ENGINEERING COOPERATIVE PROGRAM - UPJ
Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Basis

**ENGR 1090P - ENGINEERING COOPERATIVE PROGRAM - PITTSBURGH**

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Basis

**ENGR 1091 - SCHOOL OF ARTS AND SCIENCES COOPERATIVE EDUCATION**

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Basis

**ENGR 1092 - ENGRG INT'L COOPERATIVE PROGRAM**

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Basis

**ENGR 1093 - CMP SCI COOPERATIVE PROGRAM**

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Basis

**ENGR 1097 - INTERNATIONAL SPECIAL PROJECT**

Minimum Credits: 3
Maximum Credits: 3
This course involves an individual project done under the supervision of a university of Pittsburgh engineering faculty member and a faculty member of a foreign university. The project is done on site at the foreign university and involves an experimental study, a design project, a literature review of a special topic, or instruction.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

**ENGR 1098 - INTERNATIONAL SENIOR DESIGN EXPERIENCE**

Minimum Credits: 1
Maximum Credits: 1
This one credit course is focused on understanding globalization and technology with a particular emphasis on sustainability design and international experience. By the end of this course, students should understand the basic history, government, and economic strategies, related to their country; produce a final design that is the most cost-effective design possible, as funding for construction is limited and repairs in the future would be undertaken by members of the community; be able to define 'globalization' and 'sustainability' and identify how it is impacting their respective fields of study and future employment; gain awareness of differences in the business environments of the U.S. In relationship to the rest of the world.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade  

**ENGR 1099 - SPECIAL PROJECT**

Minimum Credits: 3  
Maximum Credits: 3  
Student develops an individual project under supervision of a faculty member. Project may be experimental, design oriented, or instructional. A written report is prepared.  
**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SU3 Elective Basis

**ENGR 1200 - STUDY ABROAD: MEXICO**

Minimum Credits: 1  
Maximum Credits: 18  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** H/S/U Basis

**ENGR 1201 - STUDY ABROAD: ISRAEL**

Minimum Credits: 1  
Maximum Credits: 18  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SU3 Elective Basis

**ENGR 1202 - STUDY ABROAD: ISRAEL NP**

Minimum Credits: 1  
Maximum Credits: 18  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SU3 Elective Basis

**ENGR 1203 - PITT ENGINEERING IN CHINA**

Minimum Credits: 1  
Maximum Credits: 18  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** No Grade Required

**ENGR 1204 - PITT ENGINEERING IN CHINA NP**
Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ENGR 1205 - PITT ENGINEERING IN AUSTRALIA ET

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ENGR 1206 - PITT ENGINEERING IN AUSTRALIA 2K

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ENGR 1207 - PITT ENGINEERING AUSTRALIA ET NP

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ENGR 1208 - PITT ENGINEERING AUSTRALIA 2K NP

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ENGR 1209 - STUDY ABROAD: COSTA RICA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1210 - STUDY ABROAD: FRANCE

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis
ENGR 1210IS - INSA LYON: FRANCE IN-STATE - IS

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 1210OS - INSA LYON: FRANCE OUT-OF-STATE

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 1211 - STUDY ABROAD: SWITZERLAND

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1212 - STUDY ABROAD: FRANCE

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1213 - ENGR SERVICE LEARNING: BRAZIL

Minimum Credits: 6
Maximum Credits: 6
This course examines the development and practice of science and engineering in the context of their underlying cultural bases (social, political, religious, and organizational). The goal of the course is not just to understand the practice of technology in one country versus another, but to develop analytical skills for analyzing technology in any international setting. The course is designed for students from a wide variety of backgrounds and majors; engineering background is useful but not necessary.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: No Grade Required

ENGR 1214 - STUDY ABROAD: GHANA

Minimum Credits: 3
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1215 - STUDY ABROAD: HONG KONG
Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1216 - STUDY ABROAD: PERU

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1217 - STUDY ABROAD: SINGAPORE

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1218 - STUDY ABROAD: SEMESTER-AT-SEA

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1219 - STUDY ABROAD: ECUADOR

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1220 - STUDY ABROAD: CANADA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1221 - STUDY ABROAD CHILE

Minimum Credits: 3
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis
ENGR 1222 - STUDY ABROAD: RUSSIA
Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1223 - EXCHANGE ENGLAND-UNIVERSITY OF SUSSEX
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1224 - GLOBAL ENGINEERING EDUCATION EXCHANGE: NANYANG TECHNICAL UNIVERSITY, SINGAPORE
Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1225 - STUDY ABROAD: SOUTH AFRICA
Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1226 - STUDY ABROAD: HUNGARY
Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1227 - EXCHANGE GERMANY-FH MUNICH
Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1228 - EXCHANGE URUGUAY-UNIVERSITY OF MONTEVIDEO
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1229 - STUDY ABROAD: TURKEY

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1230 - STUDY ABROAD: DENMARK

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1231 - STUDY ABROAD: TANZANIA

Minimum Credits: 3
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1232 - ENGINEERING EXCHANGE: JAPAN

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

ENGR 1233 - GE3 EXCHANGE: HONG KONG UNIVERSITY

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1234 - EXCHANGE: UNIVERSITIES OF APPLIED SCIENCE EXCHANGE, GERMANY

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis
ENGR 1235 - STUDY ABROAD: CHINA

Minimum Credits: 1  
Maximum Credits: 18  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Satisfactory/No Credit

ENGR 1236 - STUDY ABROAD: BRAZIL

Minimum Credits: 1  
Maximum Credits: 18  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: H/S/U Basis

ENGR 1237 - STUDY ABROAD: CYPRUS

Minimum Credits: 1  
Maximum Credits: 18  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: H/S/U Basis

ENGR 1238 - STUDY ABROAD: ISRAEL

Minimum Credits: 1  
Maximum Credits: 15  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: H/S/U Basis

ENGR 1239 - STUDY ABROAD: URUGUAY

Minimum Credits: 1  
Maximum Credits: 18  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: H/S/U Basis  
Course Requirements: PROG: Swanson School of Engineering

ENGR 1240 - STUDY ABROAD: ENGLAND

Minimum Credits: 1  
Maximum Credits: 18  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: H/S/U Basis

ENGR 1241 - STUDY ABROAD: SCOTLAND

Minimum Credits: 1  
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1242 - STUDY ABROAD: INDIA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1243 - EXCHANGE: NATIONAL UNIVERSITY OF SINGAPORE

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

ENGR 1244 - EXCHANGE: FIPSE CAPES BRAZIL

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1245 - STUDY ABROAD: IRELAND

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1246 - GLOBAL ENGINEERING EDUCATION EXCHANGE: SPAIN

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1247 - GE3 EXCHANGE: ENGLAND

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis
ENGR 1248 - GE3 EXCHANGE: AUSTRIA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1249 - GLOBAL ENGINEERING EDUCATION EXCHANGE: FRANCE

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1250 - STUDY ABROAD: JAPAN

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1251 - GE3 EXCHANGE: AUSTRALIA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1252 - GLOBAL ENGINEERING EDUCATION EXCHANGE: MIDDLE EAST TECHNICAL UNIVERSITY, TURKEY

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1253 - GLOBAL ENGINEERING EDUCATION EXCHANGE: JAPAN

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ENGR 1254 - EXCHANGE: UNIVERSITY OF EXETER
ENGR 1255 - STUDY ABROAD: KOREA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1256 - ENGINEERING IN THE AMERICAS

Minimum Credits: 3
Maximum Credits: 3
Traveling throughout Latin America one can encounter stunning examples of engineering expertise, from the Aztec and Mayan pyramids and cities such as Tenochtitlan, Palenque and Tikal, to the lost city of the Inca, Machu Picchu, to name just a few. This course is designed to introduce students to the methods employed in the design and construction of these and other major Pre-Columbian structures, and to analyze why these structures have remained stable in the face of time and natural hazards. Factors which made pre-Columbian engineers so effective will be analyzed using basic principles of civil engineering. The class will consist of preparatory lectures, discussion, exercises, a site visit to Cuzco and Machu Picchu (Peru), and debriefings subsequent to the site visit.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 1257 - EXCHANGE: GLOBEX IN CHINA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1258 - STUDY ABROAD: POLAND

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1259 - ENGINEERING EXCHANGE: YONSEI

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1260 - STUDY ABROAD: AUSTRIA
Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1261 - GLOBAL ENGINEERING EDUCATION EXCHANGE: ISRAEL

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1262 - STUDY ABROAD: ARGENTINA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Elective Basis

ENGR 1263 - GE3 EXCHANGE: LUND UNIVERSITY

Minimum Credits: 3
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1264 - STUDY ABROAD: CZECH REPUBLIC

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1265 - STUDY ABROAD: ITALY

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1266 - EXCHANGE: GLOBAL E3

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
ENGR 1270 - STUDY ABROAD: AUSTRALIA

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1275 - STUDY ABROAD: WALES

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1276 - ENGINEERING IN SOUTH AFRICA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

ENGR 1280 - STUDY ABROAD: GERMANY

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1281 - CLEAN ENERGY GRID ENGINEERING: SCANDINAVIA UG

Minimum Credits: 3
Maximum Credits: 3
The course will cover the application of various grid technologies from power generation through power consumption including transmission networks, grid automation, power electronics systems, communications and control, protection, grid operations, grid connectivity, renewable energy resource integration, cyber security, micro grids, DC technologies, and other emerging areas, as well as a brief introduction to power utility markets, business processes, and policy/regulation. Through classroom discussion and an assortment of group exercises, you learn to frame contemporary energy production and utilization issues in societal and global contexts, and demonstrate mastery of the issues through written and oral communication.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

ENGR 1282 - GERMAN ENGINEERING CULTURE UG

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the day-to-day business issues facing German engineers. The course will cover service businesses in Germany, workplace culture, digital factories, engineering law in Germany and a project that will tackle solving real engineering problems. Students learn to analyze typical German cultural aspects in order to understand differences in the social system of a company and use the knowledge to improve the processes
and structures. Students work with appropriate analytical methods and apply their knowledge on real business examples, given by experienced international Managers.

Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Letter Grade

**ENGR 1285 - STUDY ABROAD: NEW ZEALAND**

- Minimum Credits: 1  
- Maximum Credits: 18  
- Academic Career: Undergraduate  
- Course Component: Independent Study  
- Grade Component: H/S/U Basis

**ENGR 1290 - STUDY ABROAD: SPAIN**

- Minimum Credits: 1  
- Maximum Credits: 18  
- Academic Career: Undergraduate  
- Course Component: Independent Study  
- Grade Component: H/S/U Basis

**ENGR 1295 - STUDY ABROAD: SWEDEN**

- Minimum Credits: 1  
- Maximum Credits: 18  
- Academic Career: Undergraduate  
- Course Component: Independent Study  
- Grade Component: H/S/U Basis

**ENGR 1296 - STUDY ABROAD: ICELAND**

- Minimum Credits: 1  
- Maximum Credits: 18  
- Academic Career: Undergraduate  
- Course Component: Independent Study  
- Grade Component: H/S/U Basis

**ENGR 1300 - ENERGY TOMORROW**

- Minimum Credits: 6  
- Maximum Credits: 6  

This course explores energy efficiency and renewable energy technologies. Areas addressed are: world energy, energy and environmental implications, energy storage, wind and solar thermal applications, energy and the built environment, biomass and liquid fuels, photo voltaic devices and systems, energy management and energy and transport.

- Academic Career: Undergraduate  
- Course Component: Lecture  
- Grade Component: Letter Grade

**ENGR 1350 - SUMMER EDGE: MUNICH**

- Minimum Credits: 1  
- Maximum Credits: 15
ENGR 1351 - SUMMER EDGE: AUSTRALIA

Minimum Credits: 1
Maximum Credits: 15
Summer edge: Australia
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1352 - STUDY ABROAD: NETHERLANDS

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

ENGR 1410 - EXCHANGE: CONTROL AND SYSTEMS: ROUEN, FRANCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1411 - EXCHANGE: KOREA UNIVERSITY

Minimum Credits: 1
Maximum Credits: 18
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

ENGR 1420 - EXCHANGE GLOBAL ENGINEERING EXPERIENCES: ROUEN, FRANCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: H/S/U Basis

ENGR 1430 - PORTUGUESE 3 FOR ENGINEERS

Minimum Credits: 3
Maximum Credits: 3
This third semester of Brazilian Portuguese is specifically designed for engineering students who will be doing research and/or studying in Brazil. The course covers technical and educational terminology through examination of Brazilian sustainable engineering case studies while further advancing the students' knowledge and ability in Brazilian Portuguese. The course will further enhance the cognitive skills of engineering students, and give them an appreciation of the interrelation of career paths, language skills, and cultural awareness. This course is required for all IGERT
ENGR 1440 - INTRODUCTION TO KOREAN LANGUAGE AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course is designed for students and scholars of all disciplines, especially in engineering and science, who plan to go to Korea to study or conduct research in the future. This course is unique in its intention and contents that it includes both Korean language lessons and the study of history and cultures in Korea. This course introduces basic linguistic skills in conjunction with the cultural aspect associated with the language. While learning Korean history and culture, the participants learn how the modern Korean history is intertwined with US foreign policy, and they are encouraged to position themselves in the context of global processes. They also learn to approach Korean culture as a dynamic process in relation to global economy and politics, rather than a static and contained structure.

ENGR 1450 - ENGINEERING- THE GERMAN WAY

Minimum Credits: 3
Maximum Credits: 3
This course highlights the German approach to engineering from various perspectives. It is designed as mixture of in-class lectures and industrial experience in the form of factory tours. Four broad topics are addressed from the German perspective: (1) R&D management, (2) production and manufacturing systems, (3) digital factory layout and factory simulation, and (4) product-ergonomics and ergonomic aspects in manufacturing. In addition students select one of two additional options dealing with unique aspects of the German business economy: (1) the nature of cooperation between trade unions and employers or (2) the impact on technology law and harmonization on engineering in Europe.

ENGR 1500 - ETHICAL DILEMMAS BALANCING COST, RISK, AND SCHEDULING

Minimum Credits: 3
Maximum Credits: 3
Students will explore the interfaces among engineering ethics, design, schedules, costs and risk assessment. Teamwork, communications and management skills will also be developed. Students will analyze a series of well-known cases, as well as discussing current ethical situations involving engineers and engineering managers. Students will learn to recognize and resolve the types of ethical dilemmas that they could encounter in the workplace. A term paper serves to integrate and extend the entire course material.

ENGR 1600 - INTERNATIONAL TECHNOLOGY: INNOVATION AND LEADERSHIP

Minimum Credits: 3
Maximum Credits: 3
Globalization and innovation will be studied with a particular emphasis on China in conjunction with the Innovate 2012 conference. As such the course provides both the preparation for the conference and the post-conference synthesis of what was learned during the conference. The course will be jointly taught by University of Pittsburgh and Rice University faculty exclusively for those students who will be delegates to the Innovate Conference. Guest lecturers will be invited from the two participating universities who will discuss the history, government, religion, business
climate and culture of China. This course requires participation in the Innovate 2012 Symposium that will visit Beijing, Suzhou, and Shanghai, China from March 1 - 11.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### ENGR 1601 - INTERNATIONAL TECHNOLOGY: INNOVATION AND LEADERSHIP (NON-PITT)

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Globalization and innovation will be studied with a particular emphasis on China in conjunction with the Innovate 2012 conference. As such the course provides both the preparation for the conference and the post-conference synthesis of what was learned during the conference. The course will be jointly taught by University of Pittsburgh and Rice University faculty exclusively for those students who will be delegates to the innovate conference. Guest lecturers will be invited from the two participating universities who will discuss the history, government, religion, business climate and culture of China. This course requires participation in the Innovate 2012 symposium that will visit Beijing, Suzhou, and Shanghai China from March 1 - 11.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### ENGR 1620 - PRODUCT DESIGN AND DEVELOPMENT

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The focus of product design and development is integration of the marketing design and manufacturing functions of firms in creating new products in a diverse economy that is experiencing rapid growth. Students will analyze several case-studies within the Indian context to study the multiple stages involved with new product creation, design, engineering, and production. The importance of creating new products suited for rural-agricultural settings which are eco-friendly and satisfy sustainable economic communities will be addressed throughout the course. Topics include: discuss the set of tools and methods for product design and development; develop abilities to create a new product; awareness of the role of multiple functions in creating a new product (e.g. Marketing, finance, industrial design, engineering, production); ability to coordinate multiple, interdisciplinary tasks in order to achieve a common objective (examine local conditions, needs and constraints; case studies (to be gathered from various sources).

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### ENGR 1621 - EMPOWER: ENGINEERING FOR THE FUTURE

**Minimum Credits:** 3  
**Maximum Credits:** 3  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### ENGR 1622 - EMPOWER: ENGINEERING FOR THE FUTURE (NON-PITT)

**Minimum Credits:** 3  
**Maximum Credits:** 3  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### ENGR 1623 - ENGINEERING FOR A BETTER ENVIRONMENT: BRAZIL
ENGR 1625 - ENGINEERING BUSINESS COLLABORATIONS IN INDIA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

This course will focus on the studying modern engineering and business principles, methods, and tools, within the context of the Indian environment. The three focal areas of study are: manufacturing systems, service engineering operations, and call centers. A visit to India will showcase challenges and opportunities available at the corporate level and at the individual level in this rapidly growing economy. It will also focus on the societal impacts of new technologies and rapid expansion of engineering industries in India. Students can utilize this forum to analyze and visualize service manufacturing engineering challenges and opportunities around the world. Plant visits and interfaces with engineering students and practicing engineers will allow students to appreciate the following professional characteristics: ethics, the ability to work with others, an appreciation for other disciplines, adaptability, and an appreciation for life-long learning.

ENGR 1627 - CHINA TODAY: INDUSTRY, INNOVATION, EDUCATION

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

This short course will educate students on the impact of modern china on engineering solutions in a global and societal context, improve student's knowledge of contemporary issues relating to the engineering and business profession. At the end of the course, students will have a general understanding of the corporate, geo-political, cultural and social factors that define the Chinese landscape at the present time. An in-depth paper exploring one of these factors will be required. This short course will explore how these three factors interact in china and in the perceived position of china as a world economy.

ENGR 1628 - BRAZIL TODAY

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

This introductory course, offered jointly by Pitt and CMU, explores how current thematic factors interact to influence brazil's position in the world today and into the future. The 3-day, weekend course will touch upon issues including: education, industrial growth, economic development, business influence, exports and socio-economic shifts. Course requirements include attendance, brief written reflections, and a final paper.

ENGR 1631 - INTRODUCTION TO MINING ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

The course introduces students to: 1) the history and importance of mining, 2) the exploration and development of surface and underground mines, 3) modern mining methods and operations, 4) common mining equipment, 5) fundamentals of mine ground control and ventilation, 6) elements of coal preparation and mineral processing plants, and 7) mine health and safety management. It is designed to provide students with basic understanding of the primary elements of a mining operation and the engineering issues associated with operating a mine in a safe, effective, and sustainable manner.
The mining industry is replete with technical jargon and specialized processes and machinery that require mastery by students prior to exploration of more technically complex engineering coursework. Introductory lectures and field trips help to prepare students for the rigors of studying the other mining engineering courses offered within the Swanson School of Engineering.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** (PROG: Swanson School of Engineering) or (PLAN: Geology (BS or BPH))

### ENGR 1632 - SUSTAINABLE DEVELOPMENT AND THE MINERAL INDUSTRY

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course begins by examining the needs of society and commercial entities engaged in mineral production. Well conceived and designed mineral or solid fuel projects exercise a balance between economic prosperity, environmental health, and social equality. These concepts are then integrated into a case study, where the feasibility of a proposed mining project is analyzed. This examination forms the underpinnings of a course project report. 

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### ENGR 1633 - MINERALS INDUSTRY RISK MANAGEMENT

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Explores the concepts, models and methods used to create and support the implementation of risk management within minerals industry organizations. Models and methods include life cycle model, work process model, risk analysis methods and risk assessment methods used to implement a minerals industry risk management framework. 

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### ENGR 1634 - ENVIRONMENTAL CONTROLS IN MINING

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course is designed to study the environmental impact of coal, stone, and other mining operation and examine the engineering controls used to mitigate these impacts. The examination begins with the exploration and permitting of the mine site, emphasizing important environmental issues. Next, the impacts of active mining on land and water use are outlined. Most of these issues are related to subsidence impacting surface structures and water movement both at the surface and underground. To complete the mine's life cycle, closure and remediation issues are investigated. Lastly, a detailed examination of the issues associated with abandoned mined-lands, i.e. Acid-mine drainage, mass-wasting, fires, etc., Are studied. Throughout the course, engineering controls that focus on mitigating the environmental impacts of mining are acknowledged and assessed. 

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### ENGR 1635 - MINE VENTILATION ENGINEERING

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course provides the skills needed to analyze and design ventilation systems for underground mines based on 1) regulatory requirements, 2) health concerns for workers, 3) levels of dusts and toxic or explosive gases present, 4) mining methods used, and 5) splitting and delivery of different quantities of air to various workplaces. 

**Academic Career:** Undergraduate
ENGR 1637 - STRATA CONTROL ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
This course provides the skills needed to analyze and design ground control systems for underground mines based on 1) regulatory requirements, 2) safety concerns for workers, 3) stress and displacement characteristics, 4) proposed mining methods, and 5) local geologic conditions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

ENGR 1638 - MINING HEALTH AND SAFETY

Minimum Credits: 3
Maximum Credits: 3
Presents an overview of the health and safety issues within the mining industry and to examine current efforts to address these issues. In-depth discussion of health issues affecting mining include: diesel control, noise induced hearing loss, silicosis, coal mine dust monitoring and control, toxic substances, and toxic fumes. In-depth discussion of safety issues affecting mining include: explosives, falls of ground, mine inundation's, fire prevention, mine explosions, ventilation, methane control, emergency response and rescue, training, ergonomics, machine safety, and electrical safety.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 1639 - MINE EVALUATION AND MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Mine evaluation, an essential component of mineral resource management, are examined in terms of performing, investigating and reporting on mine sampling, mine evaluation, grade control and reserve estimation. Mine management relates the economic, governmental, social, regulatory, cost, labor, health, safety and environmental aspects of mineral extraction to the management of the mining enterprise.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 1700 - INTRODUCTION TO NUCLEAR ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Introduction to nuclear science and technology; applications of nuclear engineering; careers in nuclear industry; nuclear history; reactor types; elementary nuclear and reactor physics; nuclear radiation and safety; fuel cycle; regulations and sustainability.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (PHYS 0152 or 0175 or 0202 or 0476) and (CHEM 0102 or 0112 or 0120 or 0420 OR 0720 or 0770 or 0970); PROG: School of Engineering

ENGR 1701 - FUNDAMENTALS OF NUCLEAR REACTORS
Minimum Credits: 3
Maximum Credits: 3
Nuclear physics, fission and fusion; cross-sections; neutron flux and slowing-down; diffusion and transport; criticality condition and calculations; reactor kinetics and shielding; heat generation, transfer and cooling; reactor materials; reactor structure.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (PHYS 0152 or 0175 or 0202 or 0476) and (CHEM 0102 or 0112 or 0120 or 0420 or 0720 or 0770 or 0970); PROG: Undergraduate School of Engineering

ENGR 1702 - NUCLEAR PLANT TECHNOLOGY

Minimum Credits: 3
Maximum Credits: 3
Current and future reactor systems; nuclear power plants; balance of plant configuration; fuel cycle management; reactor operation principles; reactor plant economics; analysis and design of nuclear systems; design projects.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (PHYS 0152 or 0175 or 0202 or 0476) and (CHEM 0102 or 0112 or 0120 or 0420 or 0720 or 0770 or 0970); PROG: Undergraduate School of Engineering

ENGR 1704 - THE FRENCH NUCLEAR CYCLE

Minimum Credits: 3
Maximum Credits: 3
The French have the most complete implementation of the nuclear fuel cycle of any country in the world. Areva, a French public multinational industrial conglomerate, is mainly known for nuclear power. Their interests in the nuclear power field include mining, milling, conversion, enrichment, fuel fabrication, the design and construction of nuclear power plants, the service of nuclear power plants, used/spent nuclear fuel storage, the reprocessing of used/spent nuclear fuel, the fabrication and utilization of mixed oxide fuel. The French agency CEA, Commissariat L'energie Atomique, conducts research on advanced fuel cycles, advanced applications of nuclear power, applications of radioactivity, and the long-term disposal of radioactive waste. This course will acquaint the student with the nuclear fuel cycle via the implementation of the French nuclear fuel cycle. The course will provide introductory material on the nuclear fuel cycle in the classroom at the University. Then the students will travel to France to interact with nuclear engineering academics, engineers and scientists working in the area, and tour facilities in France.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 1713 - RADIATION DETECTION AND MEASUREMENT

Minimum Credits: 3
Maximum Credits: 3
This combined lecture and laboratory course will provided students with an introduction to the principles of radiation detection and measurement and experimental techniques. The lecture material will provide students with an understanding of the theoretical bases of detector operation, radiation interactions with matter, signal conditioning and processing electronics, measurement techniques, and statistical considerations. Laboratory work will emphasize the practical aspects of radiation detection using an array of radioactive sources, detectors, and associated signal processing electronics. Through a series of laboratory experiments, students will learn to configure and operate instrumentation used in a wide range of radiation detection applications that are of interest to nuclear power, nuclear medicine, radiochemistry, and other scientific disciplines.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGR 1716 - THE ART OF MAKING: AN INTRODUCTION TO HANDS-ON SYSTEM DESIGN AND ENGINEERING
Engineering is fundamentally a creative process in which ideas are generated and transformed into new systems and devices in the world to meet human needs. The term engineer shares its origins with ingenious: one definition of engineer is ‘a skilful inventor.’ In this course, we will explore tools and techniques for inventing, designing and prototyping systems. This course is based on experiential learning: through interactive discussions, small-team exercises, maker assignments, workshops and hands-on projects, students will obtain an introduction to design thinking, ‘maker culture’ and systems engineering. ENGR 1716 is an upper division version of freshman honors ENGR 0716. It is for sophomore, junior and senior level students. We will explore user-centric design principles, low-resolution prototyping and experience prototyping, basic building elements for systems such as sensors, computer controllers, actuators and displays, materials and methods for prototyping, and ways to analyze and troubleshoot systems. Students will gain an introduction to ‘smart systems’: automated systems that can sense the world and automatically respond in useful ways. We will also focus on the user interface: how to create control and display interfaces that enhance users’ ability to operate systems effectively and efficiently.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

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### ENGR 1770 - ENGINEERING FOUNDATIONS OF MUSIC

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Since Paleolithic times, engineering has been applied to the production of music, but advances in the past few centuries, including sound recording, the introductions of electronics, and a greater understanding of the physics, mathematics, and psychology of sound, have greatly expanded what a student can learn in the field of music engineering. This is a lecture course about the engineering aspects of music, including the following general topics: the physics of sound and the mathematics of harmony; the means of creation through mechanical musical instruments, including the human voice, as well as electronic instruments; recording, reproduction, and enhancement though signal processing; interaction with human perceptual, cognitive, and motor systems. Assuming knowledge of differential and integral calculus, the course will develop (or review) a basic understanding of convolution and Fourier Analysis through examples in the engineering aspects of music. Starting with an historical perspective on technology, we will extrapolate a look into the future of music engineering. Students will be able to describe engineering aspects of musical instruments, reproduction, and processing and apply the mathematical and physical basis for sound and the theory of harmony in understanding the system of interaction between human and machine that constitutes music. Topics covered include: convolution and Fourier Analysis; physics of sound; mathematics of harmony; physics of mechanical instruments; recording and reproduction of music; electronic processing of sound; electronic synthesis of music; psychophysics of music.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

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### ENGR 1869 - INTRO ELEC ENGRG FOR NON EE'S

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Linear electric circuits, circuit elements and sources, mesh and node equations, the venin equivalent circuits, sinusoidal steady state analysis, three phase circuits, power concepts.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

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### ENGR 1900 - INTRODUCTION TO SUSTAINABLE WATER TECHNOLOGY & DESIGN

**Minimum Credits:** 3  
**Maximum Credits:** 3  
In this course, students will be introduced to the complex and global interactions that make up the human-water interface and learn to design for water applications. Beginning with the physical/chemical and biological significance of water, this course will analyze the development of water technologies within their historical, cultural and geopolitical contexts. This introduction will serve as the foundation for quantitatively evaluating: 1) the present day water challenges that face communities, cities, and nations & 2) the state-of-the-art technologies currently deployed to manage these needs. The second half of the course will be used to explore innovative examples, examine current water research and technology and work on a
course project in which students will have the opportunity to create and design sustainable methods and technologies to meet local and or global water challenges.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**ENGR 1905 - CURRENT ISSUES IN SUSTAINABILITY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will introduce the core principles of sustainability (i.e. Social, economic, and environmental) from the perspective of several disciplines and research fields. Covering a variety of topics such as urban infrastructure, energy policy and the environment, sustainable water-use, habitat sustainability and biodiversity, the curriculum and schedule are updated annually to reflect advancements in the field of sustainable engineering and science, and to continually incorporate current topics. While the course is primarily taught by the sustainability faculty fellows it will also consist of various guest lectures by sustainability faculty and senior practitioners working throughout the Pittsburgh region. Course assignments will consist of a series of essays and assignments and culminate in a team term project. This is a required course for the undergraduate sustainability certificate and the M.S. in Sustainable Engineering.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**ENGR 1907 - SUSTAINABILITY CAPSTONE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Building upon students' previous experience and skills, this course will focus on enabling interdisciplinary student teams to synthesize comprehensive solutions to complex real-world Sustainability challenges. This is a project-based course. Project topics will be developed in consultation with instructors and sustainability stakeholders. Innovative solutions will require the application of critical thinking and collaboration to resolve. By the end of the course the students will have a deeper understanding of 1) the multi-faceted nature of Sustainability solutions 2) approaches to problem solving across fields and 3) how to communicate sustainable solutions and concepts in an interdisciplinary team environment. This course serves as a capstone course for the Sustainability certificate and M.S. in a Sustainable Engineering degree and is a required course for these two programs.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**ENGR 1920 - ENGINEERING CRAFT BREWERY - INTERNATIONAL OPPORTUNITY**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade

**ENGR 1933 - ENGINEERING A CRAFT BREWERY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will introduce students to the science of brewing and the engineering required to design and operate a craft brewery. Students will apply concepts from mass and energy balances, fluid dynamics and heat transfer, and reaction engineering to study the unit operations required to convert grain, water, yeast, and hops into beer. Students will also develop product analysis and product design skills to justify brewing choices based upon brewing science, engineering, and economic considerations.  
**Academic Career:** Undergraduate
ENGR 2210 - UNDST BRAZIL-PREP RES & STUDY

Minimum Credits: 2  
Maximum Credits: 2  
This seminar is specifically designed for students who will be doing research and/or studying in Brazil. It introduces the economic, political, social, and cultural aspects of Latin America in general and Brazil in particular. The seminar is organized and conducted by the center for Latin American studies, and features guest lectures from on Brazil, readings from current popular literature and news sources (available from the Eduardo Lozano Latin American collection, a library resource of over 340,000 volumes spanning 30 years), and contemporary films (such as decade of destruction: killing for land and Brazilian populations: stories and myths). The first half of the course will introduce students to day-to-day life in Brazil, as well as its current socio-economic situation, the influence of politics and ethnic relations, and the many aspects of Brazilian culture. The second half will focus on disciplinary perspectives that allow students to explore regional issues from a variety of viewpoints. The final seminars in the semester will be used for the presentation of individual student reports on a topic related to Brazilian life, such as the governmental structure, university system, or integration of technology with indigenous lifestyles and traditions. This course is required for all Igert fellows.

Academic Career: GRAD
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: Rich Text Editor, field_84_161578, Press ALT 0 for help  
PROG: Swanson School of Engineering

ENGSCI 1801 - ENGINEERING DESIGN 1

Minimum Credits: 3  
Maximum Credits: 3  
A major project involving literature search, planning, experimentation, analysis, an oral presentation and a final technical report. The project may be sponsored by the engineering physics program, one of its participating departments, or a local company. The project is conducted under the direction of a faculty advisor(s).

Academic Career: Undergraduate
Course Component: Practicum  
Grade Component: Letter Grade  
Course Requirements: PROG: Swanson School of Engineering; PREQ: MEMS 1043 or ECE 1896

ENGSCI 1802 - ENGINEERING DESIGN 2

Minimum Credits: 3  
Maximum Credits: 3  
The continuation of ENGRPH1801, engineering design 1.

Academic Career: Undergraduate
Course Component: Practicum  
Grade Component: Letter Grade  
Course Requirements: PROG: Swanson School of Engineering; PREQ: ENGSCI 1801 and (MEMS 1043 or ECE 1896)

ENGCMP 0150 - WORKSHOP IN COMPOSITION

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to give students who have had limited experience with writing an opportunity to increase their control of written language and their confidence in performing academic inquiry, analysis and argument. Students write in response to weekly assignments, and instruction focuses on helping students to extend, revise, and edit their work.

Academic Career: Undergraduate
Course Component: Seminar

1598
Grade Component: LG/SNC Elective Basis
Course Requirements: Enrollment restricted to students with a SAT English Verbal high score less than 560 or an ACT score of 24.

**ENGCMP 0151 - WORKSHOP TUTORIAL**

Minimum Credits: 2  
Maximum Credits: 2  
This course provides support for students who are taking ENGCMP 0150 workshop in composition. Students meet weekly with a writing center consultant to work on understanding and addressing writing assignments. Students can also expect to learn how to strengthen their writing at the sentence- and paragraph-levels. Students work one-on-one with a consultant, using the papers they produce in ENGCMP 0150 as materials for discussion.  
Academic Career: Undergraduate  
Course Component: Workshop  
Grade Component: Satisfactory/No Credit  
Course Requirements: CREQ: ENGCMP 0150 or 0152

**ENGCMP 0152 - ESL: WORKSHOP IN COMPOSITION**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to give students learning English as a foreign language an opportunity to develop their ability to write in English and their confidence in performing academic inquiry, analysis and argument. Students write in response to weekly assignments, and instruction focuses on helping students to extend, revise, and edit their work.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0007 or LING 0009

**ENGCMP 0200 - SEMINAR IN COMPOSITION**

Minimum Credits: 3  
Maximum Credits: 3  
This introductory course offers students opportunities to improve as writers by developing their understanding of how they and others use writing to interpret and share experience, affect behavior, and position themselves in the world. Specific reading and writing assignments may vary from section to section, but student writing will be the primary focus in all sections. The course is designed to help students become more engaged, imaginative, and disciplined composers.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ENGCMP 0002 or 0003 or 0005 or 0010 or 0150 or 0152 or ENG 0101; TEST SCORE: SAT Verbal 560 or Higher or ACT English 24 or Higher

**ENGCMP 0201 - COMPOSITION TUTORIAL**

Minimum Credits: 1  
Maximum Credits: 1  
This course is a series of tutorial sessions designed to help students with their writing at the sentence and paragraph levels. Students work one-on-one with a consultant in the writing center, using the papers they produce in ENGCMP 0200 as materials for discussion.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Satisfactory/No Credit  
Course Requirements: CREQ: (ENGCMP 0200 or 0203 or 0205 or 0207 or 0208) or (FP 0003 or 0006)

**ENGCMP 0203 - SEMINAR IN COMPOSITION: GENDER STUDIES**
Like other seminars in composition, this introductory course offers students opportunities to improve as writers by developing their understanding of how they and others use writing to interpret and share experience, affect behavior, and position themselves in the world. This particular seminar will include readings and writing activities that comment on gender difference and consider the ways in which language and culture construct socially acceptable gender and sexual norms.

**Academic Career:** Undergraduate

**Course Component:** Seminar

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: ENGCMP 0002 or 0003 or 0005 or 0010 or 0100 or 0150 or 0152 or ENG 0101; TEST SCORE: SAT Verbal 560 or Higher or ACT English 24 or Higher

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**ENGCMP 0205 - SEMINAR IN COMPOSITION: FILM**

Like other seminars in composition, this introductory course offers students opportunities to improve as writers by developing their understanding of how they and others use writing to interpret and share experience, affect behavior, and position themselves in the world. This particular seminar will include a series of films, along with discussions that focus on how films and other media shape the ways we view and understand the world.

**Academic Career:** Undergraduate

**Course Component:** Workshop

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: ENGCMP 0002 or 0003 or 0005 or 0010 or 0100 or 0150 or 0152 or ENG 0101; TEST SCORE: SAT Verbal 560 or Higher or ACT English 24 or Higher

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**ENGCMP 0207 - SEMINAR IN COMPOSITION: EDUCATION**

Like other seminars in composition, this introductory course offers students opportunities to improve as writers by developing their understanding of how they and others use writing to interpret and share experience, affect behavior, and position themselves in the world. This particular seminar will include readings that consider issues of teaching and learning in American education and may be of interest to those who plan to become teachers.

**Academic Career:** Undergraduate

**Course Component:** Seminar

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: ENGCMP 0002 or 0003 or 0005 or 0010 or 0100 or 0150 or 0152 or ENG 0101; TEST SCORE: SAT Verbal 560 or Higher or ACT English 24 or Higher

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**ENGCMP 0208 - SEMINAR IN COMPOSITION: SERVICE-LEARNING**

Students will engage in service-learning, pairing meaningful service in the community with academic work. Discussions will focus on students' experiences and their reflections as guided by critical readings and short essay assignments. Essays will comprise the central course texts, and weekly work will include reading and discussing the essays that students produce for this course.

**Academic Career:** Undergraduate

**Course Component:** Seminar

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** TEST SCORE: SAT Verbal 560 or Higher or ACT English 24 or Higher

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**ENGCMP 0210 - WRITING WITH FILM**

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1600
ENGCMP 0212 - SEMINAR IN COMPOSITION: TOPICS IN DIVERSITY

Minimum Credits: 3
Maximum Credits: 3
This course investigates hip hop writing, performance, and culture within a US context across the 20th and 21st centuries. The course explores the following questions: How do we understand and define hip hop writing, performance, and culture? What are the aesthetics of hip hop? How do we research and engage with hip hop writing, performance, and culture? How do we construct criticism within and around hip hop? Over the course of the semester, we will survey a range of artists, activists, writers, and theorists. Additionally, we will engage a range of texts including, but not limited to, dialogues, creative works, essays, music, interviews, news stories, raps, videos, speeches, and films. We will work consistently to establish and maintain an active writing community where we will openly and respectively engage, exchange, and evaluate ideas, experiences, and writing. Also, we will study various modes of hip hop culture and musical, artistic, and intellectual expression alongside a survey of multi-genre compositions that challenge our understandings of hip hop and its influence on how we compose, what we compose, where we compose, for whom we compose, and what are the risks and responsibilities of such compositions. More pointedly, this course will expose learners to a range of intersectional presentations of hip hop writing, performance, and culture; explore historic, theoretical, and critical approaches to hip hop; and engage learners in the study of a range of research methods.

ENGCMP 0400 - WRITTEN PROFESSIONAL COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
This course explores the methods of inquiry, analysis and composition characteristic of written communication in professional settings. The course will examine such writing's specialized use of language, conventions and formats, premises, motives, and purposes. By preparing letters, resumes, proposals, reports, etc. Students will get a feel not only for what "professional" communication is, but also for how and why it does, or can, or should function.

ENGCMP 0401 - WRITTEN PROFESSIONAL COMMUNICATION: TOPICS IN DIVERSITY

Minimum Credits: 3
Maximum Credits: 3

ENGCMP 0410 - WRITING IN THE LEGAL PROFESSIONS

Minimum Credits: 3
Maximum Credits: 3
This course is especially useful for students preparing for classes in the legal professions. Students will be trained to understand the nature of assumptions and assertions, to examine the pertinence of evidence, to judge the appropriateness of tone to subject matter and audience, and to test the validity of an argument through an analysis of its components.
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

**ENGCMP 0420 - WRITING FOR THE PUBLIC**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course explores the theory and practice of writing that serves the public interest, including writing for the nonprofit and the governmental sectors of American society. The course will explore the ethics of writing for the public, the impact of rhetorical contexts on writing, and the ways in which writing and revision can allow us to understand a problem or issue in a new way. Students can expect to read examples of writing for the public, conduct significant research, and write in different genres.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718) or ENGR 0716

**ENGCMP 0425 - DIGITAL HUMANITY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ENGCMP 0440 - CRITICAL WRITING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students in this course will be trained in the responsible development and articulation of written opinions. Material drawn from various media will be used to help students increase their powers of observation and analysis that they may learn the art of making discriminating evaluations of situations, events, issues, controversies, artifacts and objects.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718) or ENGR 0716

**ENGCMP 0450 - RESEARCH WRITING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course trains students in the techniques of responsible library research. Students will learn how to locate and utilize the resources of a library. Students will also learn how to take notes and document, use primary and secondary sources, and write paraphrases, summaries and abstracts. Each student will write a major research paper on a topic of his/her choice, one which may legitimately serve as a term paper for another course.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)
ENGCMP 0500 - TOPICS IN COMPOSITION

Minimum Credits: 3
Maximum Credits: 3
These courses are offered as alternatives to meet the general writing requirement. Each section will use a specific theme or problem to develop students' facility with the sorts of inquiry and discursive practices that characterize academic work. Topics courses require regular reading, at least 35 pages of writing, and regular revision.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENG 0012 or 0712 or 0715 or 0716 or 0718)

ENGCMP 0510 - NARRATIVES OF THE WORKPLACE

Minimum Credits: 3
Maximum Credits: 3
Narratives of the workplace builds on the work of general writing and 400 level course offerings such as written professional communication, writing in the legal professions, and writing for the public by providing students with the opportunity to diversify their writing skills through critically examining workplace narratives and creating an archived presentation based upon workplace experiences or histories.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGCMP 0515 - PERSUASIVE WRITING IN ADVERTISING

Minimum Credits: 3
Maximum Credits: 3
In this course, students will analyze and create the kinds of persuasive writing used in the fields of fundraising and advertising. Both types of writing attempt to influence the decisions people make about the money they spend, the attitudes they have, and the issues that shape our society.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENG 0012 or 0712 or 0715 or 0716 or 0718)

ENGCMP 0520 - INTEGRATING WRITING AND DESIGN

Minimum Credits: 3
Maximum Credits: 3
This course allows students to explore the rhetorical implications of design and invites students to consider design and writing as an integral process. The class will alternate lecture/discussion sessions with studio sessions, so that students can learn how to use Adobe InDesign to create both single- and multi-paged documents for particular rhetorical contexts. Student will create a number of designed pieces of writing, including a longer multi-page document for a specific audience.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or ENGR 0012

ENGCMP 0530 - WRITING FOR THE SCIENCES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC elective basis

**ENGCMP 0535 - WRITING IN THE HEALTH SCIENCE PROFESSIONS**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- Academic Career: Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC elective basis

**ENGCMP 0550 - TOPICS IN PUBLIC/PROFESSIONAL WRITING**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This topics course is intended for students beginning the public and professional writing certificate, and as a writing-intensive course for students fulfilling general education requirements or interested in writing as a subject as well as a mode of instruction. The course will focus on varied topics, addressing different forms and environments for public and professional writing.  
- Academic Career: Undergraduate  
- **Course Component:** Seminar  
- **Grade Component:** LG/SNC elective basis

**ENGCMP 0560 - WRITING ARGUMENTS**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- Academic Career: Undergraduate  
- **Course Component:** Seminar  
- **Grade Component:** Letter Grade

**ENGCMP 0600 - INTRODUCTION TO TECHNICAL WRITING**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This introductory course is for students in various technical fields. Representative technical reports will be studied, as well as abstracts, the presentation of visuals and oral communication. Writing assignments will emerge from case studies reflecting on-the-job challenges.  
- Academic Career: Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC elective basis

**ENGCMP 0610 - COMPOSING DIGITAL MEDIA**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This course requires students to compose digital media while exploring the rhetorical, poetic, and political implications of multiple writing platforms. Students will learn how to compose a range of critical media objects using web-authoring languages, text, sound, images, and video in proprietary and open-source software. Classes will focus on theories of writing, composing, design, critique, delivery, and networked distributions; critique and analysis of digital media produced by professional and amateur digital media practitioners; and analysis and revisions of digital media composed by the students themselves.  
- Academic Career: Undergraduate  
- **Course Component:** Seminar  
- **Grade Component:** LG/SU3 elective basis
ENGCMP 0620 - THEORIES OF WRITING AND TEACHING

Minimum Credits: 3
Maximum Credits: 3
This course explores theoretical and practical questions regarding how we understand the practice of writing and how we teach it. Thus the goal of the course will be for students to engage various debates regarding literacy theories and experiment with different approaches to literacy instruction. The work of the class will be analytical, inventive, and experimental, as students will have the opportunity not only to study literacy theories and pedagogues but also to create imaginative responses to these theories by considering how teachers might translate theoretical understandings about literacy into classroom practice.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

ENGCMP 0641 - WRITING FOR CHANGE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ENGCMP 0712 - CRITICAL MAKING

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGCMP 1100 - LANGUAGE OF BUSINESS AND INDUSTRY

This course concentrates on how professional people in business and industry communicate among themselves and with the rest of the world. We will both analyze written material from professional areas and practice forms and languages of successful communication in those areas. This course is primarily for students who plan to enter or now hold positions in business and industry.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)

ENGCMP 1101 - LANGUAGE OF SCIENCE AND TECHNOLOGY

This course analyzes the rhetorical character of scientific writing and examines the role of writing and the use of language in the scientific process. The course permits students to assess professionally prepared texts as well as texts produced by other students, to write and re-write their own text and to develop a critical awareness of the resources of language employed in science and technology.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)
ENGCMP 1102 - LANGUAGE OF MEDICINE
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGCMP 1103 - PUBLIC RELATIONS WRITING
Minimum Credits: 3
Maximum Credits: 3
This course studies the ways an organization communicates with its public through news releases, speeches, brochures, feature stories, annual reports, etc. The course examines the stylistic choices each writer makes and develops a critical language to describe how meaning is created through the way information is arranged. Issues of the media, ethics, propaganda and the uses of ambiguity will also be addressed.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: (ENG 0102) or (ENGCMP 0004 or 0006 or 0020 or 0200 or 0203 or 0205 or 0207 or 0208 or 0250) or (ENGR 0012 or 0712 or 0715 or 0718) or (FP 0003 or 0006)

ENGCMP 1104 - CORPORATE STORYTELLING
Minimum Credits: 3
Maximum Credits: 3
Corporate writers play key roles in defining and developing the communications landscape for organizations and their audiences. But what exactly is corporate writing? How do we, as writers, ensure we are effectively advancing the goals of our companies and clients? In this course, students will explore the conventions of content marketing, search engine optimization, writing for the web, and the other forms of business writing in order to craft inventive and accessible messages. We will also examine corporate storytelling as a tool used to construct and maintain strong company personas. Assignments will incorporate written, visual, and oral components as students launch their own companies to simulate real world projects and dynamics. This course will help you strengthen and flex your creative communication skills to engage and influence readers in a variety of channels within the corporate setting.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: (ENG 0102) or (ENGCMP 0004 or 0006 or 0020 or 0200 or 0203 or 0205 or 0207 or 0208 or 0250) or (ENGR 0012 or 0712 or 0715 or 0718) or (FP 0003 or 0006)

ENGCMP 1111 - PROFESSIONAL WRITING IN GLOBAL CONTEXTS
Minimum Credits: 3
Maximum Credits: 3
In order to create effective and powerful documents for diverse global audiences, students need to be able to negotiate the expectations, assumptions, conventions, and professional practices of different cultures. This course will help advanced undergraduate students better understand what is at stake in writing for international audiences, how to research issues relating to communication (and especially the use of English) in global contexts, and how to write professional publications for particular international audiences.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or ENGR 0012

ENGCMP 1112 - PROFESSIONAL USES OF SOCIAL MEDIA
ENGCMP 1151 - PROFESSIONAL EDITING IN CONTEXT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ENGCMP 1200 - ADVANCED TOPICS IN COMPOSITION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)

ENGCMP 1210 - TUTORING PEER WRITERS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)

ENGCMP 1220 - THE ART OF THE ESSAY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)
ENGCMP 1250 - ADVANCED TOPICS PUBLIC/PROFESSIONAL WRITING

Minimum Credits: 3  
Maximum Credits: 3
This advanced topics course is intended for juniors and seniors pursuing the public and professional writing certificate, as well as students interested in advanced writing. The course will be offered with focus on varied topics, addressing theoretical, social, or historical issues of writing in public and professional environments.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)

ENGCMP 1400 - GRANT WRITING

Minimum Credits: 3  
Maximum Credits: 3
This course allows students to study the practices related to proposing change, requesting funds, and defining projects.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)

ENGCMP 1410 - ADVANCED RESEARCH/DOCUMENTARY WRITING

Minimum Credits: 3  
Maximum Credits: 3
This course offers students the opportunity to study and use techniques of research that are used by writers in a range of professional settings.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

ENGCMP 1510 - WRITING WITH STYLE

Minimum Credits: 3  
Maximum Credits: 3
Designed with the writer in mind, this advanced-level, workshop-style course explores the sentence in its many forms and seeks to deepen students' understanding of grammar, syntax, punctuation, and style as opportunities for creative endeavor. Through the use of imaginative exercises, revisions, and discussion of texts written by students, poets, and essayists, we will immerse ourselves in the practice of writing compelling sentences that best express our thoughts and motives. The course involves a weekly workshop of works-in-progress and the creation of a chapter-length (20-25 pages) prose revisionary project by the end of semester.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

ENGCMP 1551 - HISTORY AND POLITICS OF THE ENGLISH LANGUAGE

Minimum Credits: 3  
Maximum Credits: 3
This course introduces students to both historical and present use and descriptions of the English language. Students also learn techniques for analyzing and understanding the language.

Academic Career: Undergraduate  
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)

ENGCMP 1552 - LANGUAGE, LITERACY, LEARNING

Minimum Credits: 3
Maximum Credits: 3
This course examines how individuals and societies acquire, develop, and make use of literacy. Students engage in questions concerning the social and personal consequences of literacy, and they explore various theories and practices of reading, writing, and schooling. The dual focus on how literacy functions in the development of individuals and societies makes this course especially appropriate for advanced students considering careers in elementary and secondary education.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)

ENGCMP 1900 - INTERNSHIP: PUBLIC/PROFESSIONAL WRITING

Minimum Credits: 3
Maximum Credits: 3
This internship is intended for juniors and seniors who are pursuing the public and professional writing certificate. The internship is designed to give students a productive, substantive writing experience where they will learn from and contribute to the sponsoring agency or project. Students will consult with an advisor to arrange for internships and to construct the plan of work, writing, and oversight.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

ENGCMP 1901 - UTA IN TEACHING AND TUTORING WRITING

Minimum Credits: 1
Maximum Credits: 3
This experience is intended for students who wish to engage with the theory and practice of teaching writing under the mentorship of an English department faculty member. The undergraduate teaching assistantship is designed to give students a productive, substantive experience in which they will learn from and contribute to students' learning in a classroom or in the writing center. Students will consult with a faculty mentor to arrange the undergraduate teaching assistantship and to construct the plan of work, writing, and supervision.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

ENGCMP 1902 - INDEPENDENT STUDY PUBLIC PROFESSIONAL WRITING

Minimum Credits: 1
Maximum Credits: 6
This course will allow PPW students to define special projects and a course of study to explore over the course of a term.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ENGCMP 1903 - SERVICE-LEARNING SEMINAR IN PUBLIC AND PROFESSIONAL WRITING

Minimum Credits: 1
Maximum Credits: 1
This course is open to students who are enrolled in public and professional writing courses. It is taken concurrently with these anchor courses as a voluntary, one-credit add-on. The service-learning seminar pairs meaningful and sustained service activities in a professional non-profit organization with investigation of professional writing.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Satisfactory/No Credit

**ENGCMP 1904 - SERVICE LEARNING ADD-ON CREDIT**

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

**ENGCMP 1905 - INDEPENDENT STUDY SERVICE LEARNING**

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

**ENGCMP 1910 - BRIDGE SEMINAR**

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

**ENGFLM 0355 - VISUAL LITERACY**

Minimum Credits: 3
Maximum Credits: 3
Visual literacy is an emerging area of study which deals with the growing importance of visual culture in our contemporary world and how we interpret what is seen. This course will emphasize the process of critically viewing specific media artifacts and provide tools to students that will allow them to comprehend and evaluate information presented by a variety of forms of visual media, including television, video, film, photography, and the internet.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**ENGFLM 0400 - INTRODUCTION TO FILM**

Minimum Credits: 3
Maximum Credits: 3
This is a basic course on the visual arts that offers the student abroad introduction to the medium of film. As part of this overview, the class will consider such issues as: the process of contemporary film production and distribution; the nature of basic film forms; selected approaches to film criticism; comparisons between film and the other media.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
ENGFLM 0401 - INTRODUCTION TO VISUAL CULTURE

Minimum Credits: 3
Maximum Credits: 3
Introduction to visual cultures develops skills to interpret visual culture in contemporary life. Using a wide variety of media, including film, television, advertisements, fashion magazines, museum exhibits, comic books, painting, graffiti, video games, the web, and photography, the course focuses on understanding how conceptions of visuality, gender, race, and politics shape not only definitions of high and low culture but also questions of knowledge and being. The class aims to find connections amongst all elements of culture, often positioning the students as the active analysts of everyday visual objects.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 0520 - FILM THEORY

Minimum Credits: 3
Maximum Credits: 3
A course on a form of narrative called interactive fiction, a text-driven and turn-based narrative form that takes input from a reader and responds with some degree of ‘intelligence.’ The narrative advances as a result of the interaction between the player-character, who occupies a space within the fictional world, and the fictional work itself.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0004 or 0006 or 0200 or 0203 or 0205 or 0207 or 0208 or 250 or FP 0003 or 0006 or ENG 0102 or ENGR 0012 or 0712 or 0715 or 0718

ENGFLM 0530 - FILM ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the art of the cinema, and to the techniques for its formal and iconographic analysis. It examines the nature of shot composition and visual framing, the use of color, the role of lighting as a pictorial element, the potentials of camera movement, the modes of editing and the nature of image/sound montage. It also introduces students to dominant cinema forms--narrative, experimental, documentary, etc.--And connects the cinema to visual arts (like painting and sculpture).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGFLM 0532 - INTRODUCTION TO FILM GENRES

Minimum Credits: 3
Maximum Credits: 3
This course surveys major film genres--the Western, the musical, the detective film, the screwball comedy, etc. We will trace the history of film genres from the studio era to the present, including European transformations. The course seeks to relate film genres to the culture that created them.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 0540 - WORLD FILM HISTORY

Minimum Credits: 3
Maximum Credits: 3
This course both introduces students to techniques of film analysis and acquaints them with major works and movements in international cinema. The course pays particular attention to the evolution of film narrative and visual style and landmarks in film development--European avant-garde films,
the British documentary, the classic Hollywood film, etc.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### ENGFLM 0570 - INTRODUCTION TO NEW MEDIA

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Over the past two decades, so-called "new media" -- ranging from television, computers, digital image production, video games, to the internet -- have begun to supplant the social and cultural prominence of film and other traditional media. This course will provide an introduction to a critical approach to new media. We'll look at how these media work: at the history and theory of their development, at the changes they have brought about in a broader media culture, and at their social status and significance (e.g., The place they occupy in culture, the kinds of interactions they make possible).

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### ENGFLM 0585 - TECHNOLOGIES OF THE BODY

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course considers the treatment of the body in cinema and television. In addition to analyzing media examples, students will experiment with low-tech and high-tech adaptations of protocinematic (flipbooks, camera obscura, camera lucida, magic lanterns, zoetropes), early cinema, and rapid rate photography to explore how movement and the body have been imagined in science and entertainment. Students will also explore theoretically and practically the visualization practices evident in sports, animation, motion capture, fiction film, documentary film, gaming, touchscreen technologies, and 360 degree video with virtual reality technologies.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### ENGFLM 0590 - FILMMAKING: PRODUCTION AND CRITICISM

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course introduces to filmmaking as related to cinematic expression, aesthetics, criticism, and ethics. Working in groups, students will produce short film projects. These projects are designed to foster a reflexive stance toward filmmaking practices and support students in the effort of developing a cinematic voice that is critically and historically informed. All aspects of production are viewed as a creative extension and continuation of the film writing, directing, and producing process. Through lectures and a range of readings, the class will explore craft, aesthetic, production and storytelling issues.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### ENGFLM 0712 - CRITICAL MAKING

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The Maker movement is an emerging social and media form that is at once highly networked and post-digital. Making is situated at the intersection of social media, the online gift economy, and a participatory, interventionist engagement with one's physical environment. Drawing on open source ideals and innovation structures -the free sharing of code to enable collaborative development - making has become an attempt to democratize material culture through networked access to tools. MakerSpaces and MakerHubs have become critical nodes in efforts to materialize the virtual gift economy of the Internet. In this course we will engage the intellectual and practical roots of this new medial and social form and engage in our own critical making projects, utilizing scanning, modeling, and 3D printing technologies. We will begin by looking at the history and philosophy of open
source software development, and then the political, social, cultural, and technological developments that have together given rise to critical maker culture. We will then learn some of the basic tools of scanning, modeling, and 3D printing. After initial modeling and printing assignments, students will form groups and develop collaborative final projects that involve materializing complex conceptual relationships from a topic of your choice and in a medium of your choice. The aim of this course is to "close the circuit" between creative conceptual production, social networking, and materialized object relationships. Critical making is about critically engaging and creatively remaking the world around us. By the end of the semester, you will become a critical maker!

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGFLM 0812 - MEDIA/ECOLOGY

Minimum Credits: 3
Maximum Credits: 3
From the late twentieth century to the present, ecology as a scientific discipline and set of cultural narratives has risen to the forefront of knowledge production as a way to study and understand complex biological systems, their environments, and their internal dynamics. During the same period, media systems have grown exponentially in complexity until they too have begun to exhibit some of the behaviors of ecological systems, including self-organization, feedback, evolution, and emergent properties. The term "media ecology" captures both this new, nonlinear systems approach to understanding media itself as well as the intersection between natural ecosystems and the technological assemblages with which they are intertwined. This course will explore both media that interface with natural ecosystems and works that engage contemporary media systems at different scales. The secret life of information, contagious media, and the post-natural ecologies of our present and future will challenge us to conceive of Media and Ecology as a single coupled system: the emblem of our contemporary environment. Students will have the option to produce collaborative media projects that explore the themes of the course. These can take the form of simulations, games, network graphing, film or video projects, local ecosystem analysis and/or visualization, or the mapping and analysis of a media ecosystem that interfaces with the environment.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGFLM 1190 - BRITISH FILM

Minimum Credits: 3
Maximum Credits: 3
This course explores the status of British film as a national cinema. It examines the forms and styles indigenous to British cinema; the relationship of British cinema to British social reality; the changes in film language, production and forms as they relate to the development of British cinema.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1192 - IRISH FILM

Minimum Credits: 3
Maximum Credits: 3
Irish Film will consider what it means to think about films in terms of being a national cinema or part of the transnational cinema during the global Hollywood era. Given the funding scenarios and the tax break structure, many examples of Irish cinema in the current moment are made by 'non-Irish' directors and writers. Are there still elements that can be designated as 'Irish'? We will study what themes, styles, and modes of production emerged from the intense debates about Irish cinema that emerged and dominated in the decades since the indigenous Irish industry's late development starting in 1979. We will study not only why the industry started so late because of discourses of postcoloniality but also what cinematic traits were seen as 'contaminating' or 'invading' in terms of the international mode. While we will consider the theories of how Hollywood and British cinema alternately imagine Ireland and thus have affected the international and national representations of Irishness in cinema we also will consider what effect Irish cinema has had on other cinemas due to immigration as well as the increasing visibility of Irish directors, locations, and actors in the international industry. In particular, over the term, we will watch multiple films by the same director, Neil Jordan, to see how he navigates working between Irish cinema and global Hollywood. While this course will consider these questions and more, we will pay particular attention to historical, social, and political issues and events in the culture known as Irish and particularly in its films. The readings will address Irish history, the history of Irish cinema, the characteristics of certain genres, and the works of individual directors.

Academic Career: Undergraduate
ENGFLM 1226 - EASTERN EUROPEAN COMMUNISM AT THE MOVIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGFLM 1290 - AMERICAN FILM 1

Minimum Credits: 3
Maximum Credits: 3
This course explores the development of American film from 1895 to 1939. Though the course will emphasize the evolution of American film style and genre, attention will also be paid to the history of the American film industry, and the relationship between Hollywood cinema and the broader cultural context of American society. The course will provide the student with the historical and aesthetic background with which to better appreciate the American cinema of today and yesterday.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1291 - AMERICAN FILM 2

Minimum Credits: 3
Maximum Credits: 3
This course explores the development of American film from 1940 to the present. The course examines the evolution of American film style and genre, the history of the American film industry, and the relationship between Hollywood cinema and the broader cultural context of American society.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1293 - AMERICAN PHOTOGRAPHY/AMERICAN CULTURE

Minimum Credits: 3
Maximum Credits: 3
Photography's basic function is to record. So, what and who are worth documenting? Who has the right to photograph, who and what is represented and why? How do images affirm or debunk our stereotypes about "others," and how do difference and identity emerge through photography? Race and class in American photography explores these questions by examining American photography of African Americans, native Americans, the Japanese interned, union workers, celebrities, and more. Images by and of photographers of varying backgrounds is collectively viewed and discussed in order to further understand photography's relationship to the social history of race and class in the United States, and to examine ourselves and our relationship to those like/Unlike us. Race and class in American photography spans photography's nascent developments until the early part of the 21st century. Photography by those such as Bill Burke, Teenie Harris, James van der Zee, Walker Evans, P.H. Polk, Edward s. Curtis, Toyo Miyatake, and Beth Yarnelle Edwards is examined and discussed. Readings from the course packet include essays by leading photo critics and critical theorists such as Theresa Harlan, Bell Hooks, Vicki Goldberg, Andy Grunberg, Deborah Willis and Karin Higa.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGFLM 1390 - CONTEMPORARY FILM
ENGFLM 1391 - TOPICS IN CONTEMPORARY CINEMA

Minimum Credits: 3
Maximum Credits: 3
Since the late 19th century, world cinema has been ever changing. Cinema was transformed with the coming of sound, color, and large-screen format. The "studio system" reigned from the 1920's to the 1960's then lost ascendancy. Changes also have to do with economics and financing, creating "global cinema". The woman's movement changed the stereo typical vision of women. This course will allow the program and faculty to respond to important changes in cinema.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGFLM 1410 - BOLLYWOOD AND INDIAN CINEMA

Minimum Credits: 3
Maximum Credits: 3
This course will offer an overview of various Indian cinema traditions in their historical, aesthetic, and cultural contexts. Students will learn how to analyze Indian films from the 1920s to the present in terms of formal techniques, narrative conventions, and viewing contexts and also in terms of broader historical contexts such as colonialism and the independence movement. The history and formal conventions of Mainstream Bombay Cinema will be counterpointed with other kinds of Indian film.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1420 - TRANSNATIONAL EAST ASIAN CINEMAS

Minimum Credits: 3
Maximum Credits: 3
This survey course comparatively studies the forms and histories of East Asian cinemas in the context of transnationalism and globalization. As the notion of nation-state has increasingly been problematized, the concept of "national cinema," which frames cinematic works according to their countries of origin, has come into question. This course, therefore, will revisit this theoretical debate by exploring the transnational connections among different film cultures in China, Taiwan, Hong Kong, Japan, and South Korea. The course will emphasize as much the local diversities and specificities as the stylistic, generic, thematic, and industrial conjunctions across national/cultural boundaries. While surveying major films, genres, and auteurs in East Asian cinemas through the theoretical frameworks of nationalism, transnationalism, post-colonialism, and globalism, the course will particularly focus on the shifting representation of identities in the rapidly changing social, political, and cultural environments in the region.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGFLM 1470 - FILM DIRECTORS

Minimum Credits: 3
Maximum Credits: 3
This course looks at the mode of production of films and works to understand the interweaving contributions to that mode of directors, producers and screenwriters. It will also consider less personal forces--social climate, studio style, genre and audience taste. It will, finally, examine the films of particular directors for signs of personal style, theme, or personal preoccupation.
ENGFLM 1471 - ORSON WELLES

Minimum Credits: 3  
Maximum Credits: 3  
This course considers the screen career of Orson Welles. In considering his films, the course explores the evolution of Welles' cinematic style; the thematic concerns of his work; the ideological implications of his fictional universe; and his contribution to the development of American narrative cinema.

ENGFLM 1472 - HITCHCOCK'S FILMS

Minimum Credits: 3  
Maximum Credits: 3  
This course will look at the development of Hitchcock's cinema as a way of touching upon issues central to the study of film as a cultural force; the relationship between art and entertainment; the social origins of suspense and fear; the role of the director in creating a film's meaning; the role and function of genre and cross-generic influence. We will closely look at films from all phases of Hitchcock's career and examine what their style, tone, and subject matter reveal about the powers of cinema and Hitchcock's influence on a new generation of directors.

ENGFLM 1473 - Spike Lee

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ENGFLM 1476 - THE FILMS OF STANLEY KUBRICK

Minimum Credits: 3  
Maximum Credits: 3  
This course aims to discover the extent to which Kubrick's films are unified in style and theme. We will explore their sources in other films, reputed novels and short stories. Special attention will be paid to themes commonly found in Kubrick; a satirical view of society, the links between violence and sexuality, etc.

ENGFLM 1479 - CHILDREN AND MEDIA

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
ENGFLM 1480 - TOPICS IN FILM

Minimum Credits: 3
Maximum Credits: 3
Explores selected issues in the production and reception of film.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

ENGFLM 1481 - YOUTH FILM

Minimum Credits: 3
Maximum Credits: 3
This course will look at a type of film that has been prominent in Hollywood cinema since 1955: the youth film or teen film or teenpic. The teenpic has been variously defined as films targeted at a teenage market and as films about teenagers (and sometimes both). The course will concentrate on two major periods during which teenpics thrived: the 1950s and 1980-1999. The major questions we will ask in the course are: Is the teenpic a film genre? If so, how can we describe and classify it? In considering the teenpic as a genre, we will attempt to break it down into subgenres such as the juvenile delinquent film, the teen musical, the teen horror film, nostalgic teen films, postmodern youth cult films, African American teen films and "girl" teenpics, gay and lesbian teenpics. The class will concentrate on American films, both mainstream and independent up to the present day. However, it will also include international films and television programs that fit the theme of the course. It will also study the evolving conceptualizations of "youth" and "teenager."

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1482 - THE STAR SYSTEM AND THE MOVIES

Minimum Credits: 3
Maximum Credits: 3
This course will deal with all aspects of the phenomenon of stardom in film: the production of stars, film acting, and fandom. This is not a course on any particular star, but we will use case studies of individual stars for our weekly focus. We will draw on film examples from the old Hollywood studio system as well as from post-studio films and popular culture. A particular emphasis of the course will be differences between male and female star images. In addition, we will survey a variety of recent approaches to star studies through assigned readings.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1483 - FILM SOUND

Minimum Credits: 3
Maximum Credits: 3
In this course, we will learn to listen to films and to use the language and tools of audio analysis to analyze the aural environment produced by films. Topics include the history of film sound, the relation of sound and image, aural and visual pleasures, sound and narrative meaning, soundscapes and theories of shock and modernity, the aesthetics of analog and digital sound in cinema, the 'realism' of recorded sound, film sound and space, sound in documentary cinema, and culturally specific theories of sound.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1485 - FILM AND POLITICS

Minimum Credits: 3
Maximum Credits: 3
This course examines film production, economics and forms of representation as reflections of political attitudes. We will study a variety of narrative
and non-fiction films which reveal differing political points of view, ranging from those that legitimize the dominant culture to those which criticize, if not challenge, dominant attitudes. We will screen European, U.S., Soviet and third world cinema.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1487 - FILM CENSORSHIP AND AMERICAN CULTURE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course considers some of the most important censorship battles in American history. As the first mass medium to pose a serious threat to the cultural hegemony of the genteel middle class, the movies initiated both a debate about the place of media in our society and a series of struggles over the control of commercialized leisure. This course seeks a deeper appreciation of the complexities of contemporary media politics through an engagement with the history of motion picture regulation.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1490 - POLITICAL MEDIA: FILM AND POWER IN THE 20TH CENTURY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This class examines the way media has been constructed and used by elite institutions to advance broad and specific goals for the management of populations and the establishment of political and economic conditions beneficial to those institutions. It also looks at the use of media by progressive and radical groups to challenge those conditions and institutions, beginning in the early twentieth century and expanding in the era of digital media. It includes particular focus on cinema and imperialism, making use of the resources in London and online at the Colonial Film Project.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1493 - CITY MADE STRANGE: LONDON ON SCREEN IN HORROR AND SCIENCE FICTION CINEMA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course aims to explore the deep funds of strangeness and otherness that permeate London's places and spaces, through examining films and television series that show the city as a brimming reservoir of past and future shocks. The course will examine science fiction, horror and noir/neo-gothic cinema and television from all eras, with a particular emphasis on works that take London itself as a major part of their story.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1495 - CITY SYMPHONY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The city has been an integral part of the filmmaker's vocabulary since cinema's genesis in the late nineteenth century. The urban environment and the craft of film grew up together in the twentieth century, seasoned by various convergences of technology, one notable one in the 1920s and another over the last fifteen years. This course bridges these two periods, drawing on history and theory to interrogate the form of the city symphony film essay, and develop an urban filmmaking practice that allows students to gather and formulate their own reflections on London. The course is made up of two strands, City Symphony and Urban Scavenger, taught by the same team in double sessions. Students will be strongly encouraged to bring ideas from one to the other, and to combine critical analysis with practical filmmaking.  
**Academic Career:** Undergraduate
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ENGFLM 1497 - URBAN SCAVENGING

Minimum Credits: 3  
Maximum Credits: 3  
This course will give students a critical look at the writing, development, and production of film in the 21st century. Using case studies and examples from the masters of filmmaking in both the United States and the United Kingdom, students will gain in-sight into the nature of production, the economics of making a film, and the potential avenues through which film can be distributed to an audience.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ENGFLM 1499 - INDUSTRY INSIDER: FROM SHOWRUNNER TO FINAL CUT

Minimum Credits: 3  
Maximum Credits: 3  
This course will give students the opportunity to learn about screenwriting from a professional screenwriter and producer. The scope of the course will take students through the process of writing for screen based on the very simple stages of concept, story, outline, draft, and the revision and development process. Students will also learn about the pitch process and be given opportunities to practice the pitch based on their own individual stories.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

ENGFLM 1610 - TOPICS IN GENRE

Minimum Credits: 3  
Maximum Credits: 3  
A consideration of significant emergent literary forms or practices in relation to their social and cultural contexts.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

ENGFLM 1613 - TOPICS IN FILM GENRE AND THEME

Minimum Credits: 3  
Maximum Credits: 3  
This course seeks to provide a forum for new issues that might arise in the area of film genre and/or the thematic of film representation. With the rise of high technology and popularity of Japanese anime a course in the genre of animation would be important in the future, as well as a course, following the horror of the world trade center attack, on the topic of disaster and the cinema. This course will consider a specific genre each time it is offered.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ENGFLM 1615 - THE WAR FILM

Minimum Credits: 3  
Maximum Credits: 3  
Given the current resurgence of the war film in contemporary cinema, it is worth considering the history and changing form of this genre in relation to historical wars, beginning with World War I. In the context of film genre theory, this course will consider stable and changing elements of the genre, while remaining attentive to the specificities of specific cultural moments. Although the main emphasis of the course will be on the war film as
genre, part of the semester will be devoted to documentary and non-fiction approaches to war in cinema.

**ENGFLM 1670 - GLOBAL ANIME**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course introduces the arts, history, and culture of Japanese animation (anime) in a global context. We will focus on analyzing the forms and idioms of anime in relation to changing technological conditions and the media environment. Students are expected to relate the aesthetic and cultural characteristics of anime with their own experience of digital technologies, and to expand their interest in anime to wider theoretical questions about techno-culture and new media.

**ENGFLM 1671 - MAKING THE DOCUMENTARY**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This is a projects-oriented seminar course in which students will research, define, schedule their own projects. The class covers all stages of producing a documentary from the idea through development, preproduction, production and postproduction and will examine the fundamentals of the art of documentary making: artistic identity, point of view and storyteller, form and style, and light and sound etc. Students will develop and produce original documentary short film in a collaborative learning environment, working in small groups (of two or three students). They will write, develop, and shoot their own short documentary project (8 to 10 minutes). While those interested in writing or filmmaking will find practical uses for their skills in this course, students from all disciplines, writing, science, film studies, or general liberal arts, are welcomed, and will find benefit in the acquisition of skills for presenting, representing, and persuading via sound and image. No filmmaking experience is necessary.

**ENGFLM 1672 - VISITING FILMMAKER: PRODUCTION AND CRITICISM**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course allows students to experience the full process of making a professional micro-budget feature, experimental, or documentary film. Students work on a visiting filmmaker's film from conception to final shooting, while learning about the different jobs/tasks/departments needed to realize a completed work. The class will also often host a series of professional visiting artists to discuss current and real-world examples of how their particular craft fits into the overall process of making a film.

**ENGFLM 1680 - ANIMATION**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- Animation is a course designed to survey the history of animation, both American and international. Providing an understanding of animation's history, technologies, and stylistic possibilities across national and international boundaries, the course will consider early animators through to contemporary uses of digital technologies with their fully realized characters inhabiting three-dimensional space. It will also have a thematic organization, focusing at times on specific techniques (e.g., Cell animation) and styles (e.g., Abstract).

1620
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

ENGFLM 1681 - FILM COMEDY

Minimum Credits: 3
Maximum Credits: 3
This course surveys film comedy from the silent period through the sound era. It focuses both on major comic performers and directors as well as on comic forms and traditions. In addition the course examines issues of comic structure, psychological dynamics of comedy and its political proclivities.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1683 - DOCUMENTARY FILM

Minimum Credits: 3
Maximum Credits: 3
This course explores the nature and impact of the non fiction film, its changing forms, strategies for movies, audiences and claims to veracity and objectivity. It is concerned with identifying types of documentary, the "motives" of such films, their audience and the problems posed by "documenting reality".
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1684 - MOCKUMENTARY: PRODUCTION AND CRITICISM

Minimum Credits: 3
Maximum Credits: 3
The mockumentary- a fictional film made to "look like" a documentary - became popularized as a term to describe a distinct genre in coverage of Rob Reiner's 1984 film This is Spinal Tap, a fictionalized, behind-the-scenes account of a heavy metal band's concert tour. Since then, the genre has evolved to treat a variety of subjects through a range of styles - including straightforward hoaxes (The Blair Witch Project), social parodies (Best in Show, Waiting for Guffman), and sharp criticisms of nonfictional form (The Falls, The Daily Show with John Stewart). In addition to readings, lectures and discussions, students in this class will produce short mockumentary projects. Previous production experience is not required.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGFLM 1685 - FILM MUSICAL

Minimum Credits: 3
Maximum Credits: 3
This course studies the musical as an example of a popular art in the age of mass culture, looking at the aesthetics and history of this genre as it relates to the culture that produced it. We will be looking at musicals with pleasure but also with the goal of analyzing and understanding our reactions, and those of the mass audience.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1688 - FILM WESTERN

Minimum Credits: 3
Maximum Credits: 3
This course examines the meaning of the Western to a mass audience. More specifically we will explore the genre's popularity, the way it represents
the past, the concept of the mythic hero, changes in the genre from 1939 to 1981, and the contributions to the genre of specific directors. Every effort will be made to connect changes in the Western to new concepts of America.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1694 - THE AUSTRALASIAN NIGHTMARE

Minimum Credits: 3
Maximum Credits: 3
The classic American horror is derived from a gothic heritage, an inheritor of a European context and its tropes; the falling apart of civilization through wars, disease, economic collapse, and a deconstruction of society. The horror that the current, post 9/11 generation has produced is inherently different; it plays upon central themes that pull from an Australasian context, driven from the horror films of Australia, Japan, and Korea. These films have been made and distributed outside of an American context but then repackaged to the west in remakes and revisits that awaken an American audience to themes of horror that are decidedly non-European in identity. This course will examine these films, comparing and contrasting European and Australasian tropes for horror as well as their reflection and impact on society.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGFLM 1695 - HORROR FILM

Minimum Credits: 3
Maximum Credits: 3
This course examines the kinds of narratives produced, the ways producers and directors have developed the genre, and the ways horror film exploits social attitudes and values to generate audience involvement.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1696 - FILM NOIR

Minimum Credits: 3
Maximum Credits: 3
This course will explore the notion of ‘film noir’ in a trans-national and trans-medial context. We will examine the classic films noir of the period 1941-1958 (e.g. Double Indemnity, The Killers and The Naked City), the films considered to be 'neo-noir' since the 1970s (e.g. Taxi Driver, Blade Runner, Fight Club and Memento), and the international films described as 'global noir' from Japan, Hong Kong, Europe, and many other places throughout the world (e.g. Better Tomorrow, Branded to Kill, Sonatine, and Oldboy). We will also explore how the generic modes and conventions of film noir have been incorporated into other media such as comics, animations, and video games (e.g. Ghost in the Shell, Cowboy Bebop, LA Noir and Heavy Rain). We will look at these films and media objects from the perspective of film art and history, of their relationship to wider socio-cultural contexts, and of their exploration of gender and sexuality. The course will explore debates as to whether film noir is a style, a genre, an idea in criticism, or a marketing category. We will examine the roots of film noir in German expressionism and hard-boiled detective fiction. We will examine the work of significant directors of these films, in both Hollywood and beyond, including Billy Wilder, Robert Siodmak, Fritz Lang, Orson Welles, Nicholas Ray, Guy Ritchie, Takashi Beat, Seijun Suzuki, John Woo, Johnmie To, and Park Chang-wook.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGFLM 1699 - SCIENCE FICTION FILM

Minimum Credits: 3
Maximum Credits: 3
This course examines the development of science fiction as a cinematic form, its relationship to genres such as horror and melodrama, its structure, images and style. We attempt to trace linkages between the films and social, political, scientific and aesthetic attitudes within the culture.
ENGFLM 1703 - GENDER AND FILM

Minimum Credits: 3  
Maximum Credits: 3

This course examines and questions aspects of women's role in the international cinema. The class considers both women as filmmakers, and the portrayal of women in film. Attention will also be paid to the social and historical context in which these films were made, in an attempt to understand the relationship between art and ideology.

ENGFLM 1750 - CREATIVE PRODUCTION WORKSHOP

Minimum Credits: 3  
Maximum Credits: 3

Creative Production Workshop is a projects-based course in which students will research, define, schedule, budget, and workshop their own independent projects. In a collaborative learning environment, students develop and produce original digital projects while conducting critical investigations into their role as participants in and products of digitally mediated culture. The primary goal of the course is to design and execute a self-directed, self-designed, 14-week creative project. This process can be broken down into a series of smaller goals: Students will gather and create materials for the preliminary (treatment) stage of a project; conduct creative research to develop a project design; define the goals of a project and the areas of study; identify and address technical/logistical issues of the project; organize project materials; schedule and plan use of time; create a written description of a project; and make an oral/visual presentation of their project at different stages of its development. The methods of instruction will include discussion of assigned readings, in- and out-of-class viewings of assigned films, production instruction in the film editing lab, and workshop-style peer review and feedback at all stages.

ENGFLM 1752 - TELEVISION ANALYSIS

Minimum Credits: 3  
Maximum Credits: 3

This course increases students' awareness of television as a visual medium and as a cultural force by examining the forms television programming takes and the way these structures influence viewer response. We will examine specific television genres and move through the fictional forms television takes (sitcoms, cop shows, serials, etc.) To "quality" forms of television.

ENGFLM 1760 - CINEMA AND VIDEO GAMES

Minimum Credits: 3  
Maximum Credits: 3

This course introduces a comparative study of cinema and video games, exploring the historical, cultural, aesthetic, technological and industrial intersections between these two media forms. Combining film screenings with game plays, we will try to understand how cinema and video games inform, influence and converge with each other, as well as how the interrelations between these two media may have affected visual cultures at large. We will focus on race, gender, and ethical issues of visual representations in both cinema and video games, discussing the political questions of identity, power and representation in popular culture. The class also intends to provide students with analytical frameworks in film and media studies to guide their critical interpretations of the technology, history, and forms of video games. Through writings of game designers, film scholars and media theorists, we will consider the foundational role of the discipline of film studies in the formation of critical game studies. Students will be
introduced to some key theoretical questions and concepts, such as realism, affect, hypertext, interactivity, post-humanism, media convergence and participatory culture, which are crucial for understanding the technological, cultural and social conditions of both cinema and video games in the digital age.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1790 - FILM AND LITERATURE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will examine film's convergence with, and divergence from, the literary arts. From this discussion will emerge an understanding of film's debt to literary models, as well as its own unique and innovative contributions to narrative, poetic and essay form.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1901 - INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 6  
The independent study option permits students to design courses of their own with approval of a department faculty member. Students are required to submit a proposal to a faculty member; usually, this faculty member is one that the student has worked with before and is comfortable with the subject matter of the study. Specific forms for requesting faculty approval are available in the department advising office. The forms require a description of the project, a list of the requirements and readings that the student and the faculty sponsor have agreed upon, the signature of the faculty sponsor, and the signature of the department adviser. A student must have earned at least 6 credits in film studies courses and the study proposed must not duplicate the content of regularly offered courses.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1904 - UTA IN FILM STUDIES**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
Undergraduate Teaching Assistants are arranged with individual faculty members and require special permission. A range of credit hours and grading options are available.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1920 - ADVANCED SEMINAR IN FILM STUDIES**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is designed for film majors and can be taken only when all other major requirements are satisfied. It will focus on issues of film history (either as an historical survey or through an examination of particular themes and/or problems that have arisen in the critical literature). The class will be organized as a seminar, and will involve considerable writing and/or class presentation on the part of students.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGFLM 1930 - FILM STUDIES INTERNSHIP**
Internships in film can be taken for credit with special permission from the Internship Coordinator in film.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit

**ELI 0001 - ELI: ONE COURSE**

Minimum Credits: 1  
Maximum Credits: 3

The ELI offers English classes in speaking, listening, reading, writing, and grammar at three proficiency levels: low intermediate, high intermediate, and advanced. Eli students register for ELI 0001 when they are taking only one ELI course in any given semester.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** No Grade Required  
**Course Requirements:** PROG: English Language Institute

**ELI 0002 - ELI: TWO COURSES**

Minimum Credits: 0  
Maximum Credits: 0

The ELI offers English classes in speaking, listening, reading, writing, and grammar at three proficiency levels: low intermediate, high intermediate, and advanced. Eli students register for ELI 0002 when they are taking only two ELI courses in any given semester.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** No Grade Required  
**Course Requirements:** PROG: English Language Institute

**ELI 0003 - ELI: THREE COURSES**

Minimum Credits: 0  
Maximum Credits: 0

The ELI offers English classes in speaking, listening, reading, writing, and grammar at three proficiency levels: low intermediate, high intermediate, and advanced. Eli students register for ELI 0003 when they are taking only three ELI courses in any given semester.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** No Grade Required  
**Course Requirements:** PROG: English Language Institute

**ELI 0004 - ELI: FOUR COURSES**

Minimum Credits: 0  
Maximum Credits: 0

The ELI offers English classes in speaking, listening, reading, writing, and grammar at three proficiency levels: low intermediate, high intermediate, and advanced. Eli students register for ELI 0004 when they are taking only four courses in any given semester.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** No Grade Required  
**Course Requirements:** PROG: English Language Institute

**ELI 0005 - ELI: FIVE COURSES**
The ELI offers English classes in speaking, listening, reading, writing, and grammar at three proficiency levels: low intermediate, high intermediate, and advanced. Eli students register for ELI 0005 when they are full-time ELI students in any given semester. Full-time students always register for five courses.

**ELI 0005 - ELI: FIVE COURSES**

- **Minimum Credits:** 0
- **Maximum Credits:** 0
- The ELI offers English classes in speaking, listening, reading, writing, and grammar at three proficiency levels: low intermediate, high intermediate, and advanced. ELI students register for ELI 0005 when they are full-time ELI students in any given semester.
- **Academic Career:** Undergraduate
- **Course Component:** Clinical
- **Grade Component:** No Grade Required
- **Course Requirements:** PROG: English Language Institute

**ELI 0006 - ELI: SIX COURSES**

- **Minimum Credits:** 0
- **Maximum Credits:** 0
- The ELI offers English classes in speaking, listening, reading, writing, and grammar at three proficiency levels: low intermediate, high intermediate, and advanced. ELI students register for ELI 0006 when they are taking six courses in any given semester.
- **Academic Career:** Undergraduate
- **Course Component:** Clinical
- **Grade Component:** No Grade Required
- **Course Requirements:** PROG: English Language Institute

**ELI 0007 - PROFESSIONAL AND ACADEMIC ENGLISH PROGRAM**

- **Minimum Credits:** 0
- **Maximum Credits:** 0
- This is an intensive, 6-week program for international students planning to attend graduate programs in the US. Students must already be accepted to a US graduate program or have a TOEFL 550/80 IBT score. Classes meet for five hours a day, four days a week. Class content will help students develop both language and academic/professional skills, including giving oral presentations, developing reading and listening strategies and understanding the educational culture of US graduate schools.
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** No Grade Required
- **Course Requirements:** PROG: English Language Institute

**ELI 0021 - LISTENING LEVEL 2**

- **Minimum Credits:** 0
- **Maximum Credits:** 0
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** No Grade Required
- **Course Requirements:** PROG: English Language Institute

**ELI 0022 - SPEAKING LEVEL 2**

- **Minimum Credits:** 0
- **Maximum Credits:** 0
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** No Grade Required
- **Course Requirements:** PROG: English Language Institute

**ELI 0023 - READING LEVEL 2**
ELI 0024 - WRITING LEVEL 2

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0025 - GRAMMAR LEVEL 2

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0031 - LISTENING LEVEL 3

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0032 - SPEAKING LEVEL 3

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0033 - READING LEVEL 3

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0034 - WRITING LEVEL 3
Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0035 - GRAMMAR LEVEL 3

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0041 - LISTENING LEVEL 4

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0042 - SPEAKING LEVEL 4

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0043 - READING LEVEL 4

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0044 - WRITING LEVEL 4

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0045 - GRAMMAR LEVEL 4
Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0051 - LISTENING LEVEL 5

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0052 - SPEAKING LEVEL 5

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0053 - READING LEVEL 5

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0054 - WRITING LEVEL 5

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0055 - GRAMMAR LEVEL 5

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0061 - LISTENING LEVEL 6
Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0062 - SPEAKING LEVEL 6

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0063 - READING LEVEL 6

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0064 - WRITING LEVEL 6

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0065 - GRAMMAR LEVEL 6

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0110 - GENERAL ENGLISH EVENING COURSE

Minimum Credits: 0
Maximum Credits: 0
General English evening course
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

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ELI 0111 - English for Undergraduates (E4U)

Minimum Credits: 0
Maximum Credits: 0
Our English for Undergraduates (E4U) Program is designed to provide a foundation for international students to improve their language skills, academic skills, and cultural background so that they are better prepared for their academic studies in the US. The program is specifically designed for international students who: 1) Have been accepted by an undergraduate program at a university in the US or 2) Have a TOEFL iBT score of 60 (IELTS 6) or higher and are considering applying to undergraduate programs at a university in the US
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ELI 0120 - PROFESSIONAL AND ACADEMIC ENGLISH PROGRAM

Minimum Credits: 0
Maximum Credits: 0
Professional and academic English program
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: No Grade Required
Course Requirements: PROG: English Language Institute

ENGLIT 0300 - INTRODUCTION TO LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course examines the definitions, functions, and values of literature by reading across a range of genres, styles, historical periods, and cultures. It will also introduce various reading strategies for making sense of plays, poems, novels, short stories, and essays.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

ENGLIT 0305 - IMAGINING SOCIAL JUSTICE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0310 - THE DRAMATIC IMAGINATION

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the major dramatic forms and compares the ways playwrights from several centuries use ideas, characters and dramatic techniques. We will consider how social, historical, and dramatic contexts influence our interpretations and evaluation, or may lead to alternative understandings of a play.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
**ENGLISH 0315 - READING POETRY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Poetry is usually the first literary form to evolve in a culture. Yet many today reject it as artificial, overly refined and removed from ordinary human experience. By studying various kinds of poetry, this course aims to help students break down the barriers between classic poems, contemporary poetry, and a more general lyric impulse. As the most highly condensed literary experience, poetry invites very close reading, so we will explore various techniques for making sense of poems.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

**ENGLISH 0318 - WRITING IN PARIS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students will study the American writers who lived in Paris during the 1920s "the lost generation" and the ways they were influenced by Paris and its culture.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**ENGLISH 0321 - ESSAYS AND MEMOIRS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines different uses of prose narrative in both fiction and non-fiction. Texts include memoir, essay, novels, short stories, travelogue, and biography.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

**ENGLISH 0325 - THE SHORT STORY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course studies short stories that explore a variety of themes. It seeks to define the short story as a specific literary genre and to distinguish it from earlier forms of short narrative literature. It then goes on to examine the effects of literary, cultural and historical traditions on these stories and their reception.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

**ENGLISH 0330 - GREAT BOOKS: A SEMINAR IN THE MODERN HUMANITIES (PART 1)**
ENGLIT 0331 - GREAT BOOKS: A SEMINAR IN THE MODERN HUMANITIES (PART 2)

Minimum Credits: 3
Maximum Credits: 3
The course centers on classic texts of world literature, from Homer, to the Koran, to Emerson and Woolf. This course is meant for all students who have an intellectual interest in the complex resources of some of our shared traditions as well as a healthy curiosity about the history of our present. In other words, this seminar is intended to make available a demanding, but still selective encounter with works of high aesthetic, intellectual, and indeed even political importance. (Part 1 of a 2-semester course)
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0333 - PARIS THROUGH THE AGES

Minimum Credits: 3
Maximum Credits: 3
The readings will introduce students to French writers who were influenced by Paris and who influenced the city and its intellectuals, from the Middle Ages through the twentieth century. This study abroad course includes excursions through the streets and museums of Paris. Taught in English.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGLIT 0350 - LITERATURE, TRADITION AND THE NEW

Minimum Credits: 3
Maximum Credits: 3
This course examines works from several different periods and cultures that both embody and challenge literary and cultural traditions. It explores the ways in which we are all active participants in the process by which traditions are reproduced and revised over time.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0718)

ENGLIT 0354 - WORDS AND IMAGES

Minimum Credits: 3
Maximum Credits: 3
This course explores the relationships between language and images. It studies how we describe and understand visual images and how they help us understand qualities that could not easily be defined otherwise. It considers how images function in literary texts and other writers as well as the unconventional images found in dreams, ads, and popular prints, etc.
Academic Career: Undergraduate
Course Component: Seminar
ENGLIT 0365 - IMAGINING SOCIAL JUSTICE

Minimum Credits: 3
Maximum Credits: 3
This course questions the relationship between present and/or "contemporary" literature and past literary traditions. It is not a course solely in contemporary literature but a course that compares contemporary texts with texts from other periods. It investigates the contemporary as both a complex reworking of past narratives and traditions and as the production of the experimental and the new.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

ENGLIT 0370 - LITERATURE AND IDEAS

Minimum Credits: 3
Maximum Credits: 3
This course studies invention and interpretation, and explores the various ways writers produce texts and readers make them make sense. Though texts may change from section to section and instructor to instructor, they always stimulate investigation into reading and writing as ways of knowing.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0375 - INTRODUCTION TO OPERA

Minimum Credits: 3
Maximum Credits: 3
This course, offered jointly in collaboration with the artistic and educational staff of Pittsburgh opera, provides an interdisciplinary introduction to the multimodal and synthetic art form of opera. Over the course of the semester, we will explore the essential literary, musical, and dramatic elements that have shaped the development of opera throughout the past four-hundred years. We will study a variety of historically significant operatic works, each representing a different style in the evolution of this art form. Every semester, the class as a whole will also attend two current opera productions staged by Pittsburgh opera.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0380 - SLOVAK TRANSATLANTIC CULTURES

Minimum Credits: 3
Maximum Credits: 3
Slovak European history and the interaction of Slovak and American cultures during the 120-year history of Slovak immigration is conveyed through readings in Slovak and Slovak-American literature, and through issues in literary theory that concern this theme. The course is structured around the history of Slovak, and in a broader cultural sense central European immigration to the U.S. With a special focus on Pittsburgh. Students are encouraged to investigate Pittsburgh's rich ethnic heritage and to research and write on topics tailored to individual interests.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0399 - NARRATIVE AND TECHNOLOGY
Minimum Credits: 3
Maximum Credits: 3
This course examines the relationship between traditional literary forms and contemporary media such as hypertext, web logs, fan fiction, video games, comics, and interactive fiction.

Academic Career: UGRD
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or ENGCMP 0205 or ENGCMP 0207 or ENGCMP 0208 or 0250 or FP 0003 or FP 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or ENGR 0712 or ENGR 0715 or ENGR 0718 )

ENGLIT 0500 - INTRODUCTION TO CRITICAL READING

Minimum Credits: 3
Maximum Credits: 3
This course studies three to five significant literary works in conjunction with influential criticism on each text. Students explore the uses and limits of different critical methods. The course seeks to develop a critical understanding of both classic literary texts and dominant modes of reading as changing cultural practices.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

ENGLIT 0505 - HOW TO DO THINGS WITH LITERATURE 1

Minimum Credits: 3
Maximum Credits: 3
We explore the historical, generic, and transnational range of literature in English as an object and field of study. A variety of lecturers introduce the concepts of periods and "key moments".
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0506 - HOW TO DO THINGS WITH LITERATURE 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0510 - MAKING THE BOOK

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0511 - HISTORICAL BACKGROUNDS OF ENGLISH LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course surveys the major development in English social and political history, concentrating on those that had the greatest impact on the
ENGLIT 0512 - NARRATIVE AND TECHNOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course explores the ways in which new technologies impact how we engage with stories. It examines the relationship between traditional literary forms and contemporary media, such as hypertext, web logs, fan fiction, video games, comics, and interactive fiction. As a writing-intensive course, "Narrative and Technology" will ask students to write regularly in response to course texts and class discussions. Students will have opportunities not only to write critically about the relationships among narratives and technologies but also to write creatively, experimenting with interactive, hypermedia, and/or other new media forms.

ENGLIT 0515 - CONTEMPORARY AFRICAN AMERICAN POETRY

Minimum Credits: 3
Maximum Credits: 3
This course explores the rich and diverse field of contemporary poetry by African Americans, which has witnessed a marked growth over the last three decades. It examines the range of styles, aesthetic projects, and concerns of contemporary black U.S. poets, including the relation of various forms of experimentation to tradition; vernacular, oral, and musical expression; questions of race, culture, and identity; globalization and diasporic movements; the individual and society.

ENGLIT 0521 - SCAN CULTURE: SURVEILLANCE AND THE DIGITAL

Minimum Credits: 3
Maximum Credits: 3

ENGLIT 0541 - LITERATURE AND MEDICINE

Minimum Credits: 3
Maximum Credits: 3

ENGLIT 0550 - INTRODUCTION TO POPULAR CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course covers texts from American mass culture-popular fiction, advertising, popular music, television, etc. It will explore methods of analyzing these texts, discovering what these products have in common and what distinguishes them from other cultural artifacts.
ENGLIT 0560 - CHILDREN AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course studies children's literature through an investigation of the history of childhood through its representations in children's books and other media.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0562 - CHILDHOOD'S BOOKS

Minimum Credits: 3
Maximum Credits: 3
This course surveys the field of children's literature from its earliest beginnings to the present.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0570 - AMERICAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This first course in American literature explores the characteristic features of writings from the colonial period to the present. It emphasizes the interaction between literary texts and their social contexts, and examines the emergence of a national literature.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0572 - INTRODUCTION AFRICAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Examining major works by contemporary African writers in various genres, including fiction, poetry and drama. Some preliminary reading and discussion of social context of the works. Principal focus on recurring themes in African literature.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0573 - LITERATURE OF THE AMERICAS

Minimum Credits: 3
Maximum Credits: 3
Literature of the Americas introduces students to important issues in the study of literature and culture by focusing on colonial and postcolonial traditions in regions of the Americas beyond the United States. Beginning with the European "discovery" of the "new world", it examines comparatively literary and other texts from Britain, the West coast of Africa, the US, Canada, the Caribbean and Latin America, tracing the emergence of distinctive literary traditions and preoccupations of the Americas through to significant modern incarnations.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
ENGLIT 0580 - INTRODUCTION TO SHAKESPEARE

Minimum Credits: 3
Maximum Credits: 3
This course will focus on a number of Shakespeare's major plays from all phases of his career. Class discussion will consider the historical context of the plays, their characterization, theatrical technique, imagery, language and themes. Every attempt will be made to see the plays both as poems and as dramatic events.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0590 - FORMATIVE MASTERPIECES

Minimum Credits: 3
Maximum Credits: 3
This course will study in some detail eight or nine of those masterpieces which form the largest part of what we now regard as the Western tradition of literature. The works chosen will come from various genres--epic poetry, drama, the novel, and satire. They will span the centuries from the classical periods of ancient Greece and Rome through the Renaissance and into the nineteenth century.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0597 - BIBLE AS LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This introductory course acquaints students with what is in the bible and provides background information drawn from various disciplines about the elements and issues that give it its distinctive character. Attention is necessarily given to its religious perspectives, since they govern the nature and point of view of the biblical narratives, but no specific religious view is urged.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0610 - WOMEN AND LITERATURE

Minimum Credits: 3
Maximum Credits: 3
An exploration of writings by and about women. Through our reading of various literary forms -- poetry fiction, autobiography -- we will explore the aspirations and realities of women's lives. We will consider how social issues -- class, race, etc. -- Affect women writers.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0612 - LITERATURE AND SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course aims to restore and improve the dialogue between scientific and critical-humanistic ways of understanding the world. It examines the share both ways of knowing have had in shaping our culture and our ideas by studying (and developing critical perspectives on) both scientific and
literary texts. Its goal is to produce an understanding of the common history of literature and science. The course usually focuses on a theme, issue, or topic that has historical range and contemporary relevance. Different versions of the course might focus on social, literary, and scientific understandings of gender; the social, literary, and scientific attitudes toward death and the dead; or the social, literary, and scientific definitions and theories about the ""human."" Though works of science fiction may be studied, this is not a course in science fiction. This course should be of particular interest to students in the sciences, students of literature, students of philosophy, and students of history.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** CREQ: ENGLIT 0699

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### ENGLIT 0613 - ASIAN AMERICAN LITERATURE

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Seminar  
- **Grade Component:** LG/SNC Elective Basis

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### ENGLIT 0615 - LITERATURE AND RACE

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Seminar  
- **Grade Component:** LG/SNC Elective Basis

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### ENGLIT 0616 - EXILES, NOMADS, AND MIGRANTS

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Seminar  
- **Grade Component:** LG/SNC Elective Basis

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### ENGLIT 0617 - CHANGING FAMILIES

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Seminar  
- **Grade Component:** LG/SNC Elective Basis
ENGLIT 0618 - WAR

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ENGLIT 0619 - THE LITERATURE OF THE GREAT WAR

Minimum Credits: 3  
Maximum Credits: 3  
This course focuses solely upon the literature that most poignantly depicts the experiences and perspectives of the soldiers who fought on the battlefields of World War I and the civilians who suffered its destruction. It will allow students to explore the most significant memoirs, poetry, and works of fiction that emerged from the ravaged battlefields of the western front and the ravaged homes destroyed by what some called "war to end all wars".  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

ENGLIT 0620 - THE GRAPHIC NOVEL

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ENGLIT 0621 - AFRICAN-AMERICAN LITERATURE

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ENGLIT 0625 - DETECTIVE FICTION

Minimum Credits: 3  
Maximum Credits: 3  
This course examines detective fiction in terms of its history, its social meaning and as a form of philosophizing. It also seeks to reveal the place and values of popular fiction in our lives.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

ENGLIT 0626 - SCIENCE FICTION

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students to the major ideas, themes, and writers in the development of science fiction as a genre. Discussions will help students to understand and use critical methods for the analysis of science fiction. The topics covered include problems describing and defining the genre, contrasting ideologies in soviet and American science fiction, the roles of women as characters, readers and writers of science fiction, etc.
ENGLIT 0627 - LITERATURE OF SPORTS

Minimum Credits: 3
Maximum Credits: 3
The course places the literature of sports in various intellectual contexts. It reads novels by major American writers like Malamud, Roth, cover, DeLillo, exile and Harris, as well as "serious" popular novels (North Dallas 40 and semi-tough) and personal reminiscences.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0628 - WORKING CLASS LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course explores writing produced by working-class men and women. It traces its textual traditions and explores questions of the status of the "working class", its relation to self-understandings in ethnic or gender terms as well as the effect of class on social experience, social vision and cultural production. It explores as well the relation between worker-writers and the dominant literary tradition.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0629 - THE WILD WEST

Minimum Credits: 3
Maximum Credits: 3
This course examines Westerns, the most popular and characteristic of American genres. We will read works by both "popular" and "literary" (or "serious") writers, as well as viewing movie Westerns.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0630 - SEXUALITY AND REPRESENTATION

Minimum Credits: 3
Maximum Credits: 3
This course will explore the relations between cultural texts and the shifting conceptualizations and figurations of sexuality and sexual politics over the past 150 years. The main objective of this course will be to understand the necessary but problematic relations between sexuality, cultural expression, and the social.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0635 - NEW LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course's close reading of contemporary texts seeks to develop a broad theoretical framework to understand the production and cultural status of the diverse writings of the last twenty-five years. Topics include the problematics of race, gender and class; the question of "post modernism"; and the status of national or regional literatures in a period of international capitalism.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0636 - THE GOTHIC IMAGINATION

Minimum Credits: 3
Maximum Credits: 3
This course examines the genre of gothic fiction, in Britain and the U.S., From its origins in the late 18th century until the present.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0637 - HORROR LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0640 - ALLEGORY

Minimum Credits: 3
Maximum Credits: 3
This course will introduce students to the subject of allegory.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0642 - COMEDY

Minimum Credits: 3
Maximum Credits: 3
This course studies comedy, both its deep structural patterns and its surface humor. We will read works from many periods (from the Greeks through the 20th century) and genres to understand the literary and cultural meanings of comedy.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0643 - SATIRE

Minimum Credits: 3
Maximum Credits: 3
This course studies satire in general, the techniques of certain satires in particular and the expression of satiric attitudes. We will examine satires from various times and countries so that we can better understand what satire is, how it differs from other literary forms and its function within the culture that produces it.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0644 - MYTH AND FOLKTALE
This course examines myths, legends and folktales. It explores contemporary views of such works as cognitive categories, models for behavior, "agents" for mediating "world" views, mirrors of culture, projections of sub conscious desires. In short it considers the connection between myth/folktales and the culture/intelligence that produced them.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0645 - FANTASY

Minimum Credits: 3
Maximum Credits: 3

Focusing on works that offer fantastic alternations to the world of ordinary experience, this course examines works produced from the middle ages to the present day. It raises questions about our perceptions of "reality", and the effects of conscious or unconscious wishes, desires and fears on literary representations.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0646 - APOCALYPSE

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGLIT 0647 - HARRY POTTER: BLOOD, POWER, CULTURE

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0655 - REPRESENTING ADOLESCENCE

Minimum Credits: 3
Maximum Credits: 3

This course focuses on the question of how adolescence gets represented in a variety of genres, including young adult and children's literature; novels, plays and poetry aimed at adults that take adolescence as a theme; films and television programs; scientific, journalistic, or autobiographical commentaries on the nature of adolescence; and so on. This is one of the core courses for the children's literature certificate program, but all interested students are welcome.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0699 - LITERATURE AND SCIENCE LAB

Minimum Credits: 1
Maximum Credits: 1

Academic Career: Undergraduate
Course Component: Credit Laboratory
ENGLIT 0700 - WITNESSING REVOLUTIONS

Minimum Credits: 3
Maximum Credits: 3
What role did a series of Facebook posts and tweets play in the Arab spring? When do a network of uncoordinated uprisings become a political force? How does individual protest gain world-changing power? How do revolutions happen? This course will examine fiction and nonfiction works that narrate revolutions, interpret their causes, and organize their events. We will pay special attention to the role of writing in witnessing and shaping events.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ENGLIT 0702 - INTRODUCTION TO GAME STUDIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0710 - CONTEMPORARY ENVIRONMENTAL LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course examines the ways in which contemporary writers in English have engaged with the natural environment. We will read a range of authors, from the 1960s to the present day, to consider how they have looked critically at the human effects on ecosystems, and we will also study the interdisciplinary scholarly field of ecocriticism and its responses to such writings. Throughout, we will be attentive both to the literary qualities of writings about the environment and to their historical and political contexts.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ENGLIT 0711 - STEAMPUNK

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0712 - CRITICAL MAKING

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0715 - AUSTEN AND BRONTE
ENGLIT 0720 - GLOBAL FICTIONS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 0725 - INTRODUCTION TO TRANSLATION STUDIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGLIT 0812 - MEDIA/ECOLOGY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 0815 - IRISH LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1000 - INTRO TO TRANSLATION STUDIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

This class introduces students to translation studies, an emerging discipline critical to an understanding of world literature. The focus is on English versions of literary texts in other languages and the theory underlying the transformation. The course examines translation as a form of writing which possesses a complex relationship to an earlier text to which it is similar but not equivalent. Students will consider the ways in which talented translators render influential literary works. We grapple with the following questions: how do English translations of the same text differ and what is the result? How does one evaluate a translation?

Academic Career: UGRD
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1001 - INTERACTIVE LITERATURE
ENGLIT 1002 - GAME, STORY, PLAY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGLIT 1005 - LITERATURE AND THE ENVIRONMENT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

This course examines the ways in which writers in English have engaged with the natural environment. We will read a range of authors, across time periods and up to the present day, to consider how they have looked critically at the human effects on ecosystems, and we will also study the interdisciplinary scholarly field of ecocriticism and its responses to such writings. Throughout, we will be attentive both to the literary qualities of writings about the environment and to their historical and political contexts.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1010 - MAGICAL NATURE BEFORE THE MODERN WORLD

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGLIT 1020 - HISTORY OF LITERARY CRITICISM

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

This course considers influential critical theorists ranging from Plato and Augustine to Nietzsche and Freud. Neither the readings nor the approach of the class fall under the narrow definitions of literary criticism; our focus instead will be on texts from several disciplines that offer powerful models of reading and writing and that raise interesting questions about the foundations of literature, culture, and interpretation.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1023 - CONTEMPORARY CRITICAL THEORY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

An examination of several recent critical theories that redefine the study of textual practices and cultural values. Class considers the problems each of these movements confronts, and examines the consequences of their conclusions for an understanding of literary, cultural and social institutions.
ENGLIT 1028 - LITERATURE AND PSYCHOANALYSIS

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to psychoanalytic contributions to understanding the processes of artistic creation and aesthetic response. It demonstrates how familiarity with psychoanalytic methodology enhances the alertness, subtlety and power in reading literary texts.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1100 - MEDIEVAL IMAGINATION

Minimum Credits: 3
Maximum Credits: 3
This course explores some of the ways people in the middle ages saw the world around them. We will try to understand those perceptions by reading a variety of literary works, by comparing those works to other art forms and by examining similar kinds of experience in the modern world.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1101 - INVENTION OF ENGLISH

Minimum Credits: 3
Maximum Credits: 3
The English language and its literatures are in constant flux, but this was especially true in medieval England as waves of foreign invaders and immigrants shaped the language, and political, religious, and mercantile contact with other regions of Europe contributed new aesthetic and poetic ideals. Beginning with Old English riddles, this course helps you discover the linguistic and literary DNA of English. You will discover the multiple "Englishes" and other languages that remain present in modern English and prefigure the global diversity of the Anglophone world. Along the way, you will develop familiarity with old English and multiple dialects of Middle English. You will begin to chart the continuities and ruptures involved in the transitions from tribal heroic culture to a growing sense of common identity as English people of an English kingdom. And on a parallel trajectory, you will track how the notion of a specifically English literature written by the English, in English, for the English, emerges from adaptations and negotiations with other European vernaculars. This focus forms a bridge to further study in early modern or Renaissance English literature. The tools of philology, historical language study, rhetorical analysis, and manuscript studies, lend themselves to this course's emphasis on language and history, and in developing facility with them, you will be better prepared for the study of any area of literature.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 1103 - INTRODUCTION TO OLD ENGLISH

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to learn the fundamentals of Old English as quickly as possible, in order to be able to read some of the very best Old English poetry by the end of the term. While the course is not linguistically oriented, it can serve as a background to courses in Middle English or Old Norse, as well as leading to further study in Old English literature.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1115 - CHAUCER

Minimum Credits: 3
Maximum Credits: 3
This course closely examines major works by Chaucer—the Canterbury tales and Troilus and Cressida. Though most of the reading will be in modern
English translations, some will be in the original middle English. We will view Chaucer's work in its historical, social, artistic and intellectual contexts.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1125 - MASTERPIECES OF RENAISSANCE LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course studies prose, poetry and drama written in England between 1550 and 1660—an age of religious reformation, economic and social instability, intellectual revision and political revolution. It seeks to make sense of the renaissance in terms appropriate both to that time and to our own.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1126 - ADVANCED SHAKESPEARE

Minimum Credits: 3
Maximum Credits: 3
This upper level course in Shakespeare assumes some prior work with his writings. It seeks to develop a more detailed appreciation of his writing by examining selected texts in relation to some historical, cultural or critical issue.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1127 - SHAKESPEARE ON FILM

Minimum Credits: 3
Maximum Credits: 3
This course examines how Shakespeare's works have been adapted to film and television. In this study, we will be concerned with Shakespeare as a cultural icon and with the expectations surrounding both high art and popular entertainment. Central to this examination are the relationships between a film and a text.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1128 - SHAKESPEARE'S SEXUALITIES

Minimum Credits: 3
Maximum Credits: 3
This course explores the roles of Shakespeare's female characters as they relate to cultural ideas about gender and sexuality. We will examine beliefs about "proper" behavior of both women and men and the relationship of representations of gender to social power.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1135 - LITERATURE, MEDIA, AND SCIENCE IN THE AGE OF SHAKESPEARE

Minimum Credits: 3
Maximum Credits: 3
This course will introduce students to the broad range of styles, genres, and concerns of literature written in English in the early modern period, particularly the 17th century. The designation "early modern" is capacious enough to straddle the renaissance as well as the early enlightenment.
Readings could include English writers, writers from the Americas, and writers who composed in English but wrote about countries other than England, Ireland or new England.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1150 - ENLIGHTENMENT TO REVOLUTION**

Minimum Credits: 3  
Maximum Credits: 3  
This course focuses on literature and culture of the late 17th and 18th centuries—a period of revolutionary changes in the way writers and readers viewed their world. We will read widely in the important texts of the period in order to explore the interplay of enlightenment and revolution.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1160 - LITERARY ATMOSPHERES: READING WEATHER AND CLIMATE**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1170 - ROMANTIC NATURE**

Minimum Credits: 3  
Maximum Credits: 3  
This course concentrates on writings from 1790 through the 1830's that have come to be associated with romanticism. It explores the social, intellectual and aesthetic concerns of this movement and its relationships with its British and European cultural contexts.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1175 - 19TH CENTURY BRITISH LITERATURE**

Minimum Credits: 3  
Maximum Credits: 3  
A study of the major writers and cultural issues of 19th century Britain situated in relation to the social and intellectual developments of the time.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1180 - HUMANS, ANIMALS, MACHINES IN VICTORIAN LITERATURE**

Minimum Credits: 3  
Maximum Credits: 3  
This course studies the poetry and prose produced during the reign of queen Victoria, and places these works in relation to changing practices of science, industry, empire and culture.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis
ENGLIT 1181 - VICTORIAN NOVEL

Minimum Credits: 3
Maximum Credits: 3
This course will analyze the emergence and development of the victorian novel--careful reading and focused discussion of such writers as Dickens, Eliot, Trollope, Thackeray, Hardy and Meredith will attempt to define the social, moral, and political concerns of their work as well as their narrative technique.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1199 - TOPICS IN BRITISH LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Explores thematic, formal, historical or cultural topics in British literature. It ties these issues to critical and social concerns in the development of British literature and culture.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1200 - AMERICAN LITERATURE TO 1860

Minimum Credits: 3
Maximum Credits: 3
This course surveys literature produced in America before the Civil War. In the process it explores the historical, political, social and cultural factors that affected the development of that literature. It examines the work of writers who saw themselves as powerful framers of the national experience yet fearful they would have little effects on a culture confronting problems of slavery, divisiveness, literacy, economic change, immigration, etc.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1220 - CIVIL WAR TO WORLD WAR I IN AMERICAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
An examination of changing literary practices from the civil war to the beginning of World War I. The course explores the interactions of economic and social developments on American culture.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1225 - 19TH CENTURY AFRICAN AMERICAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course will cover a wide range of materials, beginning with the late eighteenth-century poetry and prose of authors such as Phillis Wheatley and Olaudah Equiano and ending with Civil War, reconstruction, or gilded-age authors such as William wells brown, Frances Harper, Pauline Hopkins, or Paul Laurence Dunbar. Readings will include a variety of different genres of writing (slave narratives, poetry, drama, fictive and non-fictive prose) as well as pay passing attention to the significant African American intellectual and cultural movements that had a role in shaping these various literary productions.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis
ENGLIT 1227 - HARLEM RENAISSANCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 1230 - 20TH CENTURY AFRICAN AMERICAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
The first half of this course begins by examining some of the major authors from the 1920s who were a part of what came to be known as the 'new negro renaissance' or 'Harlem renaissance,' such as Langston Hughes, Nella Larsen, Countee Cullen, Claude McKay, and Zora Neale Hurston. We will then study a range of modernist and naturalist writers of the 1930s and 1940s, such as Richard Wright, Ann Petry, and Gwendolyn Brooks. In the second half of the course we will focus on several post-WWII writers that were associated with the civil rights and black arts movements, from the 1950s to the 1970s, including such figures as Ralph Ellison, James Baldwin, and Toni cade Bambara. Finally, we will consider the recent wave of African American writers that emerged with the popularization, in the 1980s, of several new genres of African American literature.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

ENGLIT 1247 - AUGUST WILSON

Minimum Credits: 3
Maximum Credits: 3
This course closely examines the work of the American dramatist august wilson. A significant amount of the playwright's work, including his epic 10-play 'Pittsburgh Cycle,' is set in Pittsburgh and notably in the hill district, where wilson spent his first 33 years. The course will engage with Wilson's plays as well as criticism, history and literature by other authors. Course goals include increased insight and skill in reading, in close analysis, and in discussing and writing about this imaginative world in its historic, social, and literary contexts. Assignments may include viewing plays and videos, researching Pittsburgh history, and field trips to the hill district.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1255 - THEATER & ACTIVISM

Minimum Credits: 3
Maximum Credits: 3
This course examines modern American drama and its representations of America as a democratic ideal, as a mythological construct and as an ideological force. The plays considered stress the social and political implications of the Tyranny of Commerce, the Loss of a Positive National Identity, the Exclusion of Women, the Disintegration of the Individual and the Devaluation of Language.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ENGLIT 1258 - ISRAELI AND PALESTINIAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
ENGLIT 1261 - SPECULATIVE FICTION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1262 - AFRICAN AMERICAN SCIENCE FICTION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1272 - THE ROARING 20'S: FROM FARMERS TO FACTORY WORKERS, FROM FLAPPERS TO FINANCIERS

Minimum Credits: 3
Maximum Credits: 3
A reading of influential literary texts from the American 1920's. The course explores changing literary techniques in relation to new views of the past, war, youth, class, politics, etc.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1305 - GREAT BOOKS 1

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ENGLIT 1306 - GREAT BOOKS 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

ENGLIT 1325 - MODERNISM

Minimum Credits: 3
Maximum Credits: 3
This course examines major works in the modernist tradition poetry, fiction, drama--to determine the role these texts have played in creating the world that seems so familiar to us now.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
ENGLIT 1350 - POSTMODERN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 1360 - TOPICS IN 20TH CENTURY LIT

Minimum Credits: 3
Maximum Credits: 3
Considers thematic, formal historical or cultural topics in late 19th and 20th century literature. It ties these issues to critical and social concerns in international modernism and post modernism.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1370 - MAKERS OF MODERN DRAMA

Minimum Credits: 3
Maximum Credits: 3
This class will read intensively and comparatively plays written by late 19th and early 20th century continental, English, Irish and American dramatists. Plays selected will reflect major dramatic movements of the period (realism, naturalism, symbolism, expressionism) and will be analyzed not only by theatrical characteristics but also in relation to their dramatic, critical and cultural contexts.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1372 - CONTEMPORARY DRAMA

Minimum Credits: 3
Maximum Credits: 3
This course surveys drama of the last thirty years and examines the ways in which role-playing and the theatre itself function as metaphors for the philosophical, social and aesthetic issues that trouble contemporary writers.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1380 - WORLD LITERATURE IN ENGLISH

Minimum Credits: 3
Maximum Credits: 3
This course examines contemporary literature, primarily in English, written in eastern Europe, Africa, Latin America, etc. It pays particular attention to its depiction of social, political and moral concerns.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1382 - PRIZED BOOKS

Minimum Credits: 3
Maximum Credits: 3
How do metropolitan taste and recognition affect dominant and emergent literatures and nations? How do particular contexts and award-winning texts exert pressure on existing criteria and values? How does the category "prized books" also implicitly constitute and comment upon a body of literature that is "unprized"? How do prized books redefine notions of readership and citizenship in the world of globalization and electronic access? Such questions will open up the idea of "world literature" not as an afterthought to the canon of "English" literature, but as an integral and definitive part of it. Students will read literature, speeches, and essays by winners of the nobel and other global literary prizes such as the booker and the commonwealth.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1384 - BANNED BOOKS**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1406 - U.S. LATINX LITERATURE**

Minimum Credits: 3  
Maximum Credits: 3  
This course will focus on U.S. Latino literature. While Mexican-Americans have roots in North America that go back to colonial times, the Latino explosion has happened mainly in the last thirty years, giving rise to new processes and forms of cultural expression, including an emerging literature that is neither a subset of U.S. Literature nor an extension of modern Latin American literature, though it has connections to both. To get an idea of what this literature involves and where it is going, we will look at some representative novels, poetry, memoirs, plays and films.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1412 - SECRET PITTSBURGH**

Minimum Credits: 3  
Maximum Credits: 3  
How much do you know about the city outside Pitt? Have you explored a hillside neighborhood using stairways instead of streets? Visited the church with the largest collection of relics outside Europe? Eaten a macaroon prepared by a transplanted French baker? Pittsburgh has a rich cultural history, from labor disputes to a vibrant arts scene. It's also a city with secrets. Students in this course will explore Pittsburgh's most unusual sites and locales; learn about the city's history and the literature it has inspired; and research and write entries for a public guide to secret Pittsburgh.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1510 - KAFKA AND THE MODERN WORLD**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1552 - HISTORY OF THE ENGLISH LANGUAGE**

Minimum Credits: 3  
Maximum Credits: 3
A survey of the linguistic development of English from Anglo-Saxon times to the present. Attention given to basic linguistic structures and discursive practices and to the social and historical conditions under which they change.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1600 - COMPUTATIONAL METHODS IN THE HUMANITIES**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This course introduces students to the use of computational modeling and programming to conduct text-based research in the humanities. The goals of this course are to learn how to identify research questions in the humanities that are amenable to computational analysis and processing, along with designing and implementing xml-based computational systems to explore those questions.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1610 - TOPICS IN GENRE**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

A consideration of significant emergent literary forms or practices in relation to their social and cultural contexts.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1611 - DEVELOPMENT OF THE NOVEL**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This course studies the development of the novel as a literary practice. Readings will reveal significant contributions to the definition of the novel; the characteristics that identify the novel, historical developments that led to its creation, and its dominant subjects.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1620 - POETRY: FORM AND ARGUMENT**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This upper-level literature elective course investigates concepts of form and argument and considers their implications for the study and practice of poetry. Course readings, class discussions, and student papers will articulate and address questions of poetics that emerge in the writing and the reading of poetry, and will also explore some of the contentions that inflect our understanding of poetry's presence in cultural life, its purpose, and its situation as an art form.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ENGLIT 1635 - CHILDREN IN PITTSBURGH**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

**Academic Career:** Undergraduate
ENGLIT 1640 - LITERATURE FOR CHILDREN

Minimum Credits: 3
Maximum Credits: 3
This course examines literature that has been and is being read by children. There are units on fairy tales, myths and legends, poetry and fiction as well as more "realistic" fiction. The approach is historical, critical and creative.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1645 - CRITL APPRCH TO CHILDREN'S LIT

Minimum Credits: 3
Maximum Credits: 3
This course examines a variety of children's books from a number of theoretical perspectives; historical, feminist, transactional, structuralist, etc. The implications of theory will be emphasized. We will place children's books and reading in the wider context of the emotional, cognitive, and moral development of the child, the popular culture of childhood, and contemporary multicultural society.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGLIT 0560 and 0562 or 0655

ENGLIT 1647 - LITERATURE FOR ADOLESCENTS

Minimum Credits: 3
Maximum Credits: 3
This course will read classics as well as modern works written specifically for an adolescent audience. We will also read and discuss sociological and psychological constructions of adolescents and books on pedagogy.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1701 - TOPICS IN WOMEN'S STUDIES

Minimum Credits: 3
Maximum Credits: 3
Investigates issues raised by the woman's movement in literature written by and about women. It ties these issues to critical and cultural concerns both at the time the text was written and to the present day.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1704 - WOMEN NOVELISTS

Minimum Credits: 3
Maximum Credits: 3
This course explores the important role women have played in the development of the novel and how they have used and transformed its generic traditions. We will place novels in the contexts of issues important to their own time and discuss questions raised by recent feminist criticism.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
ENGLIT 1715 - GLOBAL BLACK LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Despite their geographical and cultural differences, writers from Africa, the Caribbean, and the United States undergo similar experiences of oppression. Problems of self-identity, and the quest for self-respect. These similarities will be discussed in class along with a comparative approach to the texts with supplementary films, slides, and recordings.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 1716 - TOPICS IN BLACK LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Addresses recurrent issues in the relationship of black race to literary culture. Addresses recurrent issues in the black experience as it relates to dominant literary cultures.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1719 - INTRO TO HOLOCAUST LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course surveys the central texts of the literature of the holocaust, while introducing students to the main issues and preoccupations of holocaust testimony in literature and film.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 1730 - CHINESE AND WESTERN POETRY

Minimum Credits: 3
Maximum Credits: 3
A comparative study of Chinese and Western lyric poetry. This course explores the world of feeling as expressed in the poetry of two vastly different worlds: china and the West and focuses on the language of feeling in a poetic medium. The purpose of this course is to appreciate how differences between the two poetic traditions is essential to a better understanding of the two cultures.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGLIT 1738 - IRISH LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course samples the work of major figures in Irish literature. It seeks to define its national character through careful reading of selected texts.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1756 - BALLADS AND BLUES
This course acquaints students with folk and literary aspects of ballads and blues in the Anglo-American and Afro-American traditions. It surveys both forms from their separate beginnings to contemporary examples. Organized both historically and topically, the course explores influences on these forms as well as their historical, social and cultural context.

**ENGLIT 1760 - TOPICS IN POPULAR CULTURE**

Minimum Credits: 3  
Maximum Credits: 3  
Focuses on the emergence of popular culture, the relationship of modern social and economic practices, mass audiences, and modes of cultural representation, or specific popular forms.

**ENGLIT 1797 - BIBLE AS LITERATURE 2**

Minimum Credits: 3  
Maximum Credits: 3  
This course continues the bible as literature and it provides an opportunity to consider more carefully books read in the earlier course as well as to consider other books that were entirely neglected. This second semester will permit us to address some fascinating problems; what happens to narratives as they pass from an oral tradition to written form; problems of translation; the formation of a canon; the ways the bible influences later literature. The generally historical approach will permit the student to understand the time and culture of the bible.

**ENGLIT 1900 - PROJECT SEMINAR**

Minimum Credits: 3  
Maximum Credits: 3  
The junior seminar, required for English literature majors, offered in varied versions, will investigate methods and goals of literary historical study by directing attention to broad historical and theoretical issues and to long-durational developments and transformations of literacy cultural practices. Will include a range of literary, theoretical and historical texts selected to enable exploration of issues and problems that cut across traditional designations of literary historical periods.

**ENGLIT 1901 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 6  
This option permits students to design their own course with the approval of a department faculty member.

**ENGLIT 1903 - DIRECTED RESEARCH IN LITERATURE**

Minimum Credits: 3  
Maximum Credits: 3  
This course acquaints students with folk and literary aspects of ballads and blues in the Anglo-American and Afro-American traditions. It surveys both forms from their separate beginnings to contemporary examples. Organized both historically and topically, the course explores influences on these forms as well as their historical, social and cultural context.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis
ENGLIT 1904 - UTA IN LITERATURE

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ENGLIT 1907 - LITERATURE INTERNSHIP

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

ENGLIT 1910 - SENIOR SEMINAR

Minimum Credits: 3
Maximum Credits: 3
Intensive study of a single topic or figure that assumes previous work in related literary historical and critical areas. Each seminar moves toward a final paper that integrates earlier literary study with the specific critical perspective developed in this course.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGLIT 1913 - ADVANCED RESEARCH IN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Working closely with faculty members on her/his senior thesis committee to do the primary reading, foundational research, and exploratory writing for the senior thesis, the student will read a majority of the primary literary works and a significant amount of criticism and complete a minimum of 20 pages of exploratory writing or a draft of the thesis.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

ENGLIT 1914 - SENIOR HONORS THESIS

Minimum Credits: 3
Maximum Credits: 3
In this course, the student will complete all remaining research for the senior thesis and will work closely with the faculty members on his/her committee to plan, write, and revise the senior thesis.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis
ENGLIT 1925 - UNDERGRAD TEACHING IN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Students enrolled in this course will work with an instructor as an assistant to any upper-level course being offered to English majors. They will help with course materials and generate class discussion.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Satisfactory/No Credit

ENGWRT 0400 - INTRODUCTION TO CREATIVE WRITING

Minimum Credits: 3
Maximum Credits: 3
This course offers the opportunity to experiment with forms of poetry and fiction and to read and discuss from a writer's point of view contemporary writing in these genres.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGWRT 0411 - INTRODUCTION TO CREATIVE NONFICTION

Minimum Credits: 3
Maximum Credits: 3
This course will introduce undergraduates to creative nonfiction, a genre that often borrows from fiction writer's techniques while sticking to the facts. Genre includes personal essay, new journalism, memoir and quality feature writing.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or ENGR 0012

ENGWRT 0520 - INTRODUCTION TO FICTION WRITING

Minimum Credits: 3
Maximum Credits: 3
This first course in the fiction sequence introduces students to aspects of prose fiction--plot, point of view, characterization, conflict, etc. Students may write exercises on these aspects of fiction, write one or more short stories and revise frequently. Students will also read representative stories and explore their use of particular fictional techniques.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGWRT 0530 - INTRODUCTION TO POETRY WRITING

Minimum Credits: 3
Maximum Credits: 3
Through writing exercises, analysis of modern and contemporary poetry and frequent revision of their own poetry, students learn the basic elements of poetry writing.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
ENGWRT 0540 - WRITING YOUTH LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course will introduce undergraduates to the art of writing for young people. It may focus on a single genre in depth (for instance, the young adult novel) or invite students to read and write broadly across a range of genres (picture books, children's poetry, nonfiction for the young, etc.). This course serves as an approved category 1 elective for the children's literature certificate program, but all interested students are welcome.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

ENGWRT 0550 - FUNDAMENTALS OF NEWS REPORTING

Minimum Credits: 3
Maximum Credits: 3
The internet has led newspapers, corporations and non-profit agencies to create websites that dispense news and information 24 hours a day, seven days a week, and these agencies need people who can write efficiently in that style. This makes clear, concise, accurate writing - the basis of all news reporting - more important than ever. In fundamentals of news reporting, students will learn to identify news, write effective summaries of the information, structure stories well, conduct research, and identify sources of reliable facts and informed opinions. Students will write about their surrounding communities: the University, Oakland, the city of Pittsburgh. The course will also include lectures and discussions about media law and ethics.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

ENGWRT 0560 - SCREENWRITING AND NARRATIVE

Minimum Credits: 3
Maximum Credits: 3
This course will explore developing character-based stories in the screenplay form. Students will be exposed to a variety of readings including original screenplays, related prose, and texts which reinforce basic tenets of good story telling. Students will write rigorously building from idea to outline with great attention to structure and character development. Students will develop writing abilities, critical facilities in approaching work, and an understanding of principles of storytelling common in narrative forms.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0200 or (ENGCMP 0203 or 0205 or 0207 or 0208 or 0250 or FP 0003 or 0006 or ENGCMP 0004 or 0006 or 0020 or ENG 0102) or (ENGR 0012 or 0712 or 0715 or 0716 or 0718)

ENGWRT 0610 - INTRODUCTION TO JOURNALISM AND NONFICTION

Minimum Credits: 3
Maximum Credits: 3
This course is designed to develop your skills as a nonfiction writer. Through a combination of required readings, creative exercises, peer critiques and critical discussions, you will develop an understanding of the fundamentals of journalism as well as an introduction to the wide-ranging possibilities of nonfiction writing as a genre: narrative long form, the personal essay, immersion journalism and forms of creative nonfiction. This class will be divided into two components; gathering information and shaping stories.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
ENGWRT 0650 - READINGS IN JOURNALISM

Minimum Credits: 3
Maximum Credits: 3
This course is intended to introduce journalism students to news, feature, and column/op-ed writing as practiced by the best papers - and the best writers - nationally. The course will focus on the methods for obtaining the information needed to create solid news stories, and strategies ranging from extensive, in-depth interviewing, background reading, and the journalistic "legwork" and "digging" that produces incisive, accurate accounts and the very best "investigative reporting".
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGWRT 1010 - INTERMEDIATE FICTION

Minimum Credits: 3
Maximum Credits: 3
Students work on writing short stories and read a wide range of stories. Students can expect to revise their work regularly. Class sessions will address problems in fiction writing -- from plot to characterization, from point-of-view to style.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0520; MIN GRADE: 'C'

ENGWRT 1020 - ADVANCED FICTION

Minimum Credits: 3
Maximum Credits: 3
This course will continue the development of literary devices introduced in the prerequisite fiction writing courses (introduction to fiction and intermediate fiction), and introduce new core writing skills to master such as narrative voice and narrative time, point-of-view, methods of characterization, the use of suspense and tension as functions of plot, scene-setting, dialogue, elements of style, and the importance of "place" in fiction. The class time will be divided between work-shopping, student writing, and discussion of readings.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 1010 ( MIN GRADE 'C')

ENGWRT 1050 - The Lyric Essay

Minimum Credits: 3
Maximum Credits: 3
In this class, students will be invited to experiment with the boundaries between nonfiction, fiction, and poetry. They will read and write a wide variety of Lyric Essays-including mosaics, prose poems, and double-portraits-as well as compose a short audio monologue.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGWRT 1090 - MASTERING POINT OF VIEW

Minimum Credits: 3
Maximum Credits: 3
This course acquaints the student with a variety of first and third person points of view. Through readings, class discussions and written work, students develop a mastery of the internal monologue, dramatic monologue, letter, diary and other forms.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0520 or 0530 or 0550 or 0610

ENGWRT 1091 - AUTOBIOGRAPHY AND CREATIVE IMPULSE

Minimum Credits: 3
Maximum Credits: 3
This advanced level, mixed-genre course will explore various ways autobiographical material might be generated, structured, modified, and revised. In addition to frequent in-class writing and a final project, students will read and respond to published essays, poetry, and fiction.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0520 or 0530 or 0550 or 0610

ENGWRT 1092 - WRITER'S JOURNALS

Minimum Credits: 3
Maximum Credits: 3
This course studies the journal as an art form. It also questions the purpose and value of journal keeping for a writer.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0520 or 0530 or 0550 or 0610

ENGWRT 1094 - READINGS IN CONTEMPORARY FICTION

Minimum Credits: 3
Maximum Credits: 3
This course acquaints students with a variety of contemporary writers. This study helps students raise questions about their own developing esthetics as they are reflected in form and take into account their dual roles as creative writers and critics. It also helps students access their relationship to reviewing and criticism, including its benefits to a creative writer developing a career, and to discover techniques of reviewing and criticism which aid and do not transgress upon their esthetics and its expression.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0520

ENGWRT 1095 - TOPICS IN FICTION

Minimum Credits: 3
Maximum Credits: 3
This course concerns itself with matters of interest in fiction writing; form and technique, contemporary production, and the relation of the fiction writer to his/her society.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGWRT 1098 - THE CONTEMPORARY BESTSELLER

Minimum Credits: 3
Maximum Credits: 3
Students will read books in a variety of genres that have all appeared on the New York Times' bestseller list. We will examine the elements of craft that play a role in making a book a bestseller, such as suspense, characterization, world-building, and plot. A series of assignments will allow students to put these elements into practice in their own writing.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGWRT 1101 - SENTENCE SHOP: EXPERIMENTS IN TIME AND SPACE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGWRT 1200 - WRITING THE CITY

Minimum Credits: 3
Maximum Credits: 3
The course's goal is to encourage your personal recording of experiences through which you gain insight and self-discovery. Journal entries reflect the significance of travel experiences that others can share and expand. Travel narratives and oral presentations are evaluated.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGWRT 1210 - POETRY WORKSHOP

Minimum Credits: 3
Maximum Credits: 3
For this advanced poetry writing course, the central text will be the student's own writing. Students will read recently published poetry, regularly write their own poetry and frequently rewrite it.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0530; MIN GRADE: 'C'

ENGWRT 1245 - STUDIO IN AFRICAN-AMERICAN POETRY AND POETICS

Minimum Credits: 3
Maximum Credits: 3
Intended for graduate students and advanced undergraduates, Studio in African American Poetry and Poetics will be a course in interdisciplinary making, as we investigate the evolving fields of African American poetry and poetics through a critical and a creative lens.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0400 or ENGWRT 0530 or ENGLIT 0315 or ENGLIT 0515

ENGWRT 1290 - READINGS IN CONTEMPORARY POETRY

Minimum Credits: 3
Maximum Credits: 3
This course focuses on American poets who have come to prominence since 1963. We will read widely in the poetry of this period to understand its unique contribution to the development of poetic form and its relationship to the culture that produced it.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0530
ENGWRT 1310 - NEWSPAPER 1

Minimum Credits: 3
Maximum Credits: 3
Students in this course learn how to profile individuals, report trends, take polls and write about a community. The course provides hands-on practice in feature writing and a workshop approach to critiquing students' and professionals' work.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0550; MIN GRADE: 'C'

ENGWRT 1330 - INTERMEDIATE NONFICTION: SCENE AND POINT-OF-VIEW

Minimum Credits: 3
Maximum Credits: 3
Students in this course will study, practice, produce and revise short pieces of literary nonfiction while examining basic structures of the essay, the profile, and long form narratives. We will study the anatomy of a scene and explore techniques of scene-by-scene construction. Students will be expected to master the basics of point-of-view, and to begin experimenting with voice. We will develop research techniques including the art of the interview and immersion research. This course will place emphasis on digital forms of publishing. Students will develop personal blogs. Workshopping of student work will be limited.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0550 or 0610; MIN GRADE: 'C'

ENGWRT 1340 - ADVANCED NONFICTION: LONG FORM NARRATIVE

Minimum Credits: 3
Maximum Credits: 3
This course focuses on developing students' skill as magazine writers by producing articles for widely different markets. It emphasizes professional preparation from the idea stage to a final, revised, polished version suitable for submission. Students analyze their markets, and discuss both those markets and student writing in class.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 1330; MIN GRADE: 'C'

ENGWRT 1370 - JOURNALISM BOOT CAMP: WRITE NOW

Minimum Credits: 3
Maximum Credits: 3
The course is a journalism boot camp-like experience where students will work closely with the instructor and editors on the Pitt news to prepare for the real world of journalism.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGWRT 1375 - GREAT MODERN JOURNALISTS: FIRST DRAFTERS OF HISTORY

Minimum Credits: 3
Maximum Credits: 3
This course explores the lives of men and women who have made significant contributions to the craft of journalism and to society's understanding of how history unfolds. Students read and discuss works by and about great journalists, beginning turn-of-the-century and ending with more contemporary works. Selections highlight the contributions made to journalism and society, while also documenting the evolution of the press and
how it experienced and presented signal events to the American public such as social movements, wars and elections. Speakers and outside assignments augment readings and discussion.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  

**ENGWRT 1377 - MEDIA LITERACY: WRITING AND READING YOUR WAY THROUGH THE DIGITAL LANDSCAPE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will teach you how to be media literate and understand the role of media in a democracy. You will learn how to identify and verify news, and how to understand news gathering and sourcing. You will learn how to distinguish between the demands of real journalism as you do your own writing and the realities of the digital world.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**ENGWRT 1378 - WOMEN IN JOURNALISM**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**ENGWRT 1390 - READINGS IN CONTEMPORARY NON-FICTION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course familiarizes students with a number of different forms of and approaches to contemporary non-fiction writing.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGWRT 0550 or 0610  

**ENGWRT 1391 - WRITING THE REVIEW**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course explores various types and styles of reviews. Students read a variety of critics as well as write original reviews of film, television, theatre, music, books, etc.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (ENGCMP 0004 or 0006 or 0020 or 0200 or 0203 or 205 or 207 or 208 or 0250) or (FP 0003 or 0006) or ENG 0102 or ENGR 0012  

**ENGWRT 1393 - SPORTS WRITING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course affords students the opportunity of studying modern sports writing techniques, with an added goal of improving their writing skills.
deals with the differences between sports reporting and writing and news reporting and writing. Ideally, a student with an interest in sports writing will complete the course with an idea of how best to collect information, organize it and disseminate it in an appealing manner. Clear, entertaining prose will be stressed.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGWRT 0550 or 0610

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### ENGWRT 1394 - SCIENCE WRITING

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- The emphasis of this introductory science writing course will be two fold: you will learn to find, read, assess, and interpret scholarly scientific writing; you'll also read books and articles that use creativity, imagination and poetic acuity to make scientific ideas clear to the lay reader. Through the deep study of pieces of science writing and the completion of a series of short exercises, you will gain the skills you need to write and revise feature-length articles.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (ENGCMP 0004 or 0006 or 0020 or 0200 or 0203 or 0205 or 0207 or 0208 or 0250) or (FP 0003 or 0006) or ENG 0102 or ENGR 0012

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### ENGWRT 1399 - TOPICS IN NON-FICTION: NEWSPAPER

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This course examines the history, lives and livelihoods famous female journalists who made exceptional contributions to journalism despite institutional and gender obstacles. Starting with the turn-of-the century, we look at women and their writing who covered domestic and international beats such as Nellie Bly, Martha Gellhorn, Gloria Steinem, and Lara Logan who have left their mark on women's history.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

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### ENGWRT 1403 - TOPICS IN NON-FICTION: ELECTRONIC MEDIA

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This course concerns itself with the varieties of writing for the electronic media, and with related matters of interest; form and technique, contemporary production, ethical and legal matters, and the general relation of the writer in this field to his/her society.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ENGWRT 0520 or 0530 or 0610

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### ENGWRT 1430 - LITERARY AND ONLINE PUBLISHING

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This course will introduce students to the art and craft of literary and online publishing. Students will research independent literary magazines and small presses, both online and in print. They will learn the basics of literary publishing from both an editorial and an authorial perspective. They will use what they learn to produce an online site featuring the work of Pitt-Greensburg writing program graduates, as well as individual print chapbook-length collections from the English writing program capstone.

**Academic Career:** Undergraduate  
**Course Component:** Lecture
ENGWRT 1435 - LITERARY PUBLISHING IN PRINT AND ONLINE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0520 or 0530 or 0610

ENGWRT 1450 - AUDIO STORYTELLING

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0400, or 0410, or 0520, or 0530, or 0610

ENGWRT 1451 - MULTIMEDIA ESSAY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0400 or 0410 or 0520 or 0530 or 0610

ENGWRT 1501 - TOPICS IN CREATIVE WRITING

Minimum Credits: 3
Maximum Credits: 3
Topics in Creative Writing will explore writing that crosses boundaries in a variety of ways, between traditional genres (fiction, nonfiction, poetry, drama) or that is interdisciplinary (between writing and, for instance, studio arts, photography, music, or dance). Writers of all genres have been influenced, challenged, and enriched by other kinds of artists’ productions and practices (and vice versa), and this class will examine those engagements and influences especially in but not limited to contemporary work.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGWRT 1510 - ADVANCED POETRY

Minimum Credits: 3
Maximum Credits: 3
In this course, students will spend time reading and exploring poetry written by established contemporary authors, thereby furthering their understanding of literary device, craft, practice and form. They will also identify and consider the literary transitions embedded within the contemporary works they study. As part of the analysis of texts in question, students will write imitations of several of the poems discussed in class. Class time will be divided between workshopping, student writing and discussing the required reading.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 1210; MIN GRADE: 'C'
ENGWRT 1515 - THE BOOK AS ART: TEXT AND IMAGE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: English Writing (BA)

ENGWRT 1540 - WRITING YOUTH LITERATURE 2

Minimum Credits: 3
Maximum Credits: 3
Expanding on the fundamentals of writing youth literature, students will aim to complete the first draft of a novel-length piece for either a young adult or middle grade audience. Incoming students must have an approved idea and roughly sixty consecutive pages of writing already completed.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ENGWRT 1650 - PLAYWRITING 1

Minimum Credits: 3
Maximum Credits: 3
A beginning course in writing for the stage. Starting with short scenes, students will work towards understanding the craft and art of constructing theatre stories to be performed by actors. The final project will be a one-act play. Throughout there will be emphasis on the stage effectiveness of the writing and opportunity for informal performance of student scripts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ENGWRT 1651 - PLAYWRITING 2

Minimum Credits: 3
Maximum Credits: 3
This is an advanced course in the study of playwriting. The goal is to create performable plays.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: THEA 1365 or ENGWRT 1650

ENGWRT 1710 - SENIOR SEMINAR IN FICTION

Minimum Credits: 3
Maximum Credits: 3
In this seminar students are expected to criticize student work intelligently and constructively. It is designed for students familiar with the craft of writing who wish to refine their writing skill and make their stories more subtle, original and meaningful. Analysis of student writing will be supplemented by the reading of professionally written stories.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 1010

ENGWRT 1730 - SENIOR SEMINAR IN POETRY
Minimum Credits: 3
Maximum Credits: 3
A fairly broad knowledge of 20th century poetry in English is assumed. Most class hours will be devoted to workshop critiques; a portion of class time will be spent discussing the work of younger contemporary poets.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 1210

**ENGWRT 1750 - SENIOR SEMINAR IN NONFICTION**

Minimum Credits: 3
Maximum Credits: 3
This is a workshop-intensive class in which students will work on one research-intensive piece of long form narrative nonfiction of about 8,000 words. This course will place heavy emphasis on digital forms of publishing. Students will maintain personal blogs and personal websites where they will publish their own work and participate in the editing and publishing of a class-wide digital magazine.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 1330

**ENGWRT 1760 - ADVANCED REPORTING**

Minimum Credits: 3
Maximum Credits: 3
This course will stress in-depth-interpretive reporting in specialized areas such as science, business, and politics.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGWRT 0550 or 0610

**ENGWRT 1900 - INTERNSHIP: WRITING**

Minimum Credits: 3
Maximum Credits: 3
This course offers students an opportunity to work as interns for local media, including newspapers, magazines and television stations. The internships are complemented by close supervision and seminars dealing with some of the ethical, legal, and practical issues facing the working professional.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

**ENGWRT 1901 - INDEPENDENT STUDY**

Minimum Credits: 1
Maximum Credits: 6
This option permits students to design their own course with the approval of a department faculty member. Students must submit a proposal to the faculty member. Note: the proposed study must not duplicate the content of regularly offered courses.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

**ENGWRT 1904 - UTA IN WRITING**
FILMST 0001 - FILMMAKING 1: FUNDAMENTALS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

Filmmaking is a creative process that combines art, science, craft, and collaboration. This course is a hands-on introduction to the process, starting with the building blocks of motion pictures: light and cameras, composition, editing, and visual storytelling. You will complete two short videos over the course of the semester, shooting video with DSLR cameras and editing using Adobe Premiere Pro. In-class exercises will provide a deeper understanding of making moving images. All enrolled students will be responsible for paying a course fee for the use of equipment.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

FILMST 0120 - PHOTOGRAPHY 1

Minimum Credits: 3
Maximum Credits: 3
This course introduces you to the world of digital photography. During the semester, you will develop your unique photographic style through hands-on practice with camera controls, print quality, composition, and subject matter. You will explore different facets of what makes a quality photograph: exposure, quality of light, Photoshop, and digital printing. Lectures will examine the work of important contemporary and historical photographers. Grading is based on assignments, written exams and a final portfolio. All enrolled students will be responsible for paying a course fee for the use of equipment.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

FILMST 0121 - ANIMATION 1

Minimum Credits: 3
Maximum Credits: 3
This course in frame-by-frame motion picture production is designed for both beginners and seasoned animators. Over the course of the semester, you will be encouraged to experiment with a variety of media and techniques including digital 2D, hand-drawn 2D, clay, cutouts, puppets, time-lapse, and pixelation. Through lectures and demonstrations, you will explore storyboarding, animation history, character development, acting, and the principles of animation. While drawing is one approach to animation, drawing skills are not required to succeed. All enrolled students will be responsible for paying a course fee for the use of equipment.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0001; PROG: Dietrich Sch Arts and Sciences

FILMST 0151 - WEB DESIGN 1

Minimum Credits: 3
Maximum Credits: 3
This course provides a solid, broad-based foundation for web page and site design. Designing for the world wide web includes an understanding of interface functionality and user-friendliness in addition to literate, visual communication. The class gives an introduction to html; image compression; using browser-safe color; and producing web pages with a WYSIWIG editor.
FILMST 0200 - 35MM PHOTOGRAPHY AND DARK ROOM

Minimum Credits: 3
Maximum Credits: 3
This is a production course where students, through a series of lectures and laboratory periods, will learn the process of seeing (making an exposure) and the craftsmanship (making a photographic print) that are the fundamental aspects of photography. The lecture will be divided into three main categories; technique, aesthetics, and assignments. Students must have access to a 35mm camera which has a full range of aperture settings and shutter speeds.

FILMST 0201 - MEDIUM FORMAT PHOTOGRAPHY

Minimum Credits: 3
Maximum Credits: 3
This course will give awareness and understanding of the technical and aesthetic implications of photography. Students will learn to visually articulate their ideas and discuss their work and the work of others through group critiques. The course will refine the basic knowledge of camera mechanisms, film developing, and printing. Areas of exploration will include lighting, high contrast film, solarization, infrared film, and sequential imagery. Other curricular areas include black and white filters; bleaching and toning prints; and archival preservation and mounting.

FILMST 0221 - PHOTOGRAPHY 2

Minimum Credits: 3
Maximum Credits: 3
Expanding on the skills learned in Photography 1, this course will have you developing your photographic vision while honing your digital processing skills. Shooting assignments and lectures involve using Lightroom for image editing and adjustments, basic color management, monochrome, and color digital printing. You will also incorporate Photoshop, HDR, images for the web, contact sheets, and file archiving into your photographic workflow. Upon finishing the course, you will have a final project that is exhibition ready. Grading is based on class participation, written exams and assignments. All enrolled students will be responsible for paying a course fee for the use of equipment.

FILMST 0225 - STUDIO LIGHTING

Minimum Credits: 3
Maximum Credits: 3
This is a production course in studio photography. The emphasis will be on lighting techniques. Assignments will include portraiture, tabletop set ups and synchronizing flash units with daylight. Considerable outside time is required to complete assignments. This course is taught at Pittsburgh Filmmakers' School of Filmmaking and Photography, located at 477 Melwood Avenue. All enrolled students will be responsible for paying a course fee for the use of Pittsburgh Filmmakers' facilities and equipment.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0200; PROG: Dietrich Sch Arts and Sciences

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0210

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0201

FILMST 0230 - NON-SILVER PRINTING

Minimum Credits: 3
Maximum Credits: 3
Acting as both picture-maker and chemist, the student will study photographic history. The artist/student will also choose the most appropriate combination needed to suit specific photographic ideas. This course will allow the student to work within the whole photographic process, that is, the student will be mixing the chemicals and applying the photosensitized emulsion to the support-base that he/she chooses. The processes examined will be cyanotype, van dyke brown, and gum bichromate.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0201

FILMST 0235 - DOCUMENTARY PHOTOGRAPHY

Minimum Credits: 3
Maximum Credits: 3
The primary objective of this course will be to concentrate on a cohesive visual statement about Pittsburgh. Areas of concentration will revolve around the landscape, social landscape (people in their environment), cityscape, and portraiture. Discussions will be held during class time to discuss different approaches to the objective. Individual attention will be given to aesthetic and technical problems that may arise. Lab techniques in advanced negative and print processing, and seminars to review student work will also be part of this course.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0201

FILMST 0245 - PHOTO EDITING 1

Minimum Credits: 3
Maximum Credits: 3
This course explores digital imaging as a method for manipulating and presenting work. Techniques covered include scanning, image retouching, correction and manipulation, printing and creative use of layers, selections, and masks. Assignments include restoration, digital colorizing of black and white imagery and digital color printing.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0001 or 0120 or 0200 or 0400; PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

FILMST 0250 - BUSINESS OF PHOTOGRAPHY AND MULTIMEDIA

Minimum Credits: 3
Maximum Credits: 3
In this class students learn the basics of professional practices as they relate to various photography markets including, Editorial, Advertising, Weddings, Portraits and Fine Art Photography. Students will learn to research and apply basic marketing principles so that they can successfully promote their work and skills as a professional photographer. Students will create business cards, letterhead and promotional pieces to use in the day-to-day dealings of their business. They will learn to sequence and format their portfolio (created in Advanced Photographic Production) for both print and online viewing. Other topics include branding, blogs, SEO - analytics, artist statements, and production proposals, copyright, licensing and professional business practices and etiquette.

Academic Career: Undergraduate
FILMST 0400 - POST-PRODUCTION 1

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students from film, video and photography to the desktop Macintosh computer-the preferred interface when dealing with graphics-related applications. Students will first become acquainted with and proficient in the mac operating system. The course will survey the most popular applications for manipulating photographic images, combining text with images, and doing simple video and audio editing on a mac. Students will integrate readings, lecture and in-class lab sessions to complete their own projects.

Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

FILMST 0410 - PHOTOGRAPHY 3

Minimum Credits: 3  
Maximum Credits: 3  
This course offers advanced Photoshop techniques. Learn to make complex selection and color correction, texture maps, advanced layering and masking principles. Learn to make custom color profiles along with essentials of digital color management. Emphasis is on the development and exploration of a personal vision and the creation of a digital portfolio.

Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PROG: College of General Studies

FILMST 0420 - POST-PRODUCTION 2

Minimum Credits: 3  
Maximum Credits: 3  
In this course, you will experience the entire post-production pipeline from both a technical and aesthetic point of view. Lectures will discuss editing before and during shooting and the effect of editing on pacing, emotion, and meaning. Class demonstrations will explore all phases of post-production, from logging and rough cutting to recolor grading and final output. Grading is based on quality and timeliness of work produced.

Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: FILMST 0500 or 0601; PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

FILMST 0430 - AUDIO PRODUCTION

Minimum Credits: 3  
Maximum Credits: 3  
This course explores sound as a fundamental element of human experience and media. Audio production - the recording and editing of sound - is the focus of the class, leading to the creation of an original sound file and podcast file as a final project. Emphasis is on creating a "soundscape": a rich, multi-layered production constructed from audio sources such as interviews, narration, ambience, live events, sound effects, and music. Class demonstrations cover how various microphones work and how to use them, as well as the physics, history, and theory of sound recording. All enrolled students will be responsible for paying a course fee for the use of equipment.

Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: LG/SNC Elective Basis
FILMST 0500 - SUPER-8 AND 16MM FILM PRODUCTION

Minimum Credits: 3
Maximum Credits: 3
This course will introduce you to the use of motion picture film as a physical, time-based art medium. You will participate in a series of in-class exercises to develop proficiency in the use of super-8 and 16mm cameras, lighting and sound equipment and editing software. Over the course of the semester, you will create a short film of your own conception.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0001; PROG: Dietrich Sch Arts and Sciences

FILMST 0601 - FILMMAKING 2: SIGHT AND SOUND

Minimum Credits: 3
Maximum Credits: 3
In this hands-on course, you will continue to acquire the skills required to design, shoot and edit HD video. Demonstrations and in-class exercises introduce more professional camera operation, lighting, sound, special effects, and editing workflows. You will apply this new knowledge and facility to several out-of-class assignments of increasing sophistication over the course of the semester. All enrolled students will be responsible for paying a course fee for the use of equipment.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0001; PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

FILMST 0610 - DIGITAL EFFECTS 1

Minimum Credits: 3
Maximum Credits: 3
This course covers digital methods of combining video, photographs, graphics, text and other visual elements, and manipulation of those elements to tell a story. Course includes software such as Adobe After Effects, Adobe Photoshop and Illustrator. Topics include gaining an understanding of the structure of digital images, transparency and masking, Chroma keying, using layers and depth, key frame animation, image processing, effects and their use, formats, input and output of imagery and workflow methods.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PREQ: FILMST 0601; PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

FILMST 1120 - DIRECTING ACTORS

Minimum Credits: 3
Maximum Credits: 3
This course explores the communication between directors and actors and how a director's vision translates into playable action on the screen. Class sessions will provide examples and practical experience in successful director/actor collaboration. Students will learn how to judge a good performance and will practice directing techniques that lead to better performances by actors. It is a laboratory class and students will direct each other. The format combines hands-on exercises, taping, screening and lecture. Grading is based on exercises, homework, taped scenes and participation.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 1130; PROG: Dietrich Sch Arts and Sciences or College of General Studies
FILMST 1130 - DIRECTING MOTION PICTURES

Minimum Credits: 3
Maximum Credits: 3
This course addresses some of the basic problems of designing and directing scenes for motion pictures. Some of the problems discussed are the relationship of film to reality, the meaning of cinematic techniques, continuity, shot selection, cut selection and visualization techniques. The format is a combination of lecture, screening and interactive group exercises. Extensive outside work is necessary. All enrolled students will be responsible for paying a course fee for the use of equipment.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0001 or ENGFLM 0590; PROG: Dietrich Sch Arts and Sciences

FILMST 1132 - ELEMENTS OF SCREENWRITING

Minimum Credits: 3
Maximum Credits: 3
As an introduction to writing for the audiovisual media, this course combines theory, analysis and practical exercise. Students will address the basic issues of screen writing: idea, story, structure, scene, character, dialogue and action. Concurrent with the theoretical discussion will be a series of practical exercises. Students will develop stories and characters and mold them into scenes. Students will also submit written analysis on a current film from a screenwriting perspective.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: Dietrich Sch Arts and Sciences

FILMST 1133 - DEVELOPING THE FEATURE SCRIPT

Minimum Credits: 3
Maximum Credits: 3
This advanced course will help you develop your feature film idea into a full treatment. Weekly discussions and writing assignments focus on creating the plot, scene, sequences, setting, and subplots. By the end of the semester, you will have completed a scene-by-scene treatment of your original work. Considerable outside work is required. Grading is based on weekly assignments, the quality of the written treatment and class participation.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 1132; PROG: Dietrich Sch Arts and Sciences

FILMST 1135 - WRITING THE ORIGINAL SERIES

Minimum Credits: 3
Maximum Credits: 3
Episodic stories can be traditional TV sitcoms or drama series, serialized narratives meant to be binged on streaming networks, independent web series, even stories told through a series of Snapchat stories. As different as they are structurally, they all have similar challenges - the writer must create a rich, interesting world and populate it with compelling characters in order to keep an audience watching from episode to episode. In this course students with basic screenwriting skills will apply those skills to the creation of an episodic series, from pitching the series through developing the story arc to writing the pilot episode.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 1132 or ENGWRT 0560

FILMST 1140 - ACTING FOR THE CAMERA
Minimum Credits: 3
Maximum Credits: 3
This course is designed for actors who would like to improve their craft by better understanding the differences between acting for the stage and acting for the camera. The course will describe and demonstrate the contrasts between stage and screen acting in specific shooting scripts and follow that with appropriate script study, character analysis and exercise in film acting techniques. Each class will include lecture, videotaped examples of performances for analysis and critique and the practical experience of working in front of the camera.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: College of General Studies

FILMST 1145 - SOUND FOR MOTION PICTURES

Minimum Credits: 3
Maximum Credits: 3
This course will enable students to convert sound to a digital analog, recording, processing, storing and mixing sounds to varied effects in relation to visual media. Particular emphasis will be placed on the special requirements of sound for narrative film: intelligibility in voice reproduction, achieving and maintaining synchronism, and the relationship between voice, music, sound effects and story. All enrolled students will be responsible for paying a course fee for the use of equipment.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0500 or 0601; PROG: Dietrich Sch Arts and Sciences or College of General Studies

FILMST 1157 - LIGHTING FOR MOTION PICTURES

Minimum Credits: 3
Maximum Credits: 3
This course allows students from both the film and video disciplines to expand their aesthetic boundaries by overcoming technical limitations. Students will learn theories of lighting to create a particular emotional, psychological, or physiological effect in the viewer, and will participate in lighting and shooting a variety of situations in class. Differences between lighting for film and video, light metering, and various lighting tools are among the topics covered. Contemporary film examples will be examined and discussed in class. All enrolled students will be responsible for paying a course fee for the use of equipment.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: College of General Studies

FILMST 1201 - LARGE FORMAT PHOTOGRAPHY

Minimum Credits: 3
Maximum Credits: 3
View camera photography is a large format single exposure technique which can be used to produce high quality, fine grained images. Students will learn to use view cameras under a variety of circumstances. This is an advanced course in which there is an emphasis on creating a "personal vision" and the effective presentation of furnished images.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 0201

FILMST 1235 - EXPERIMENTAL CAMERA

Minimum Credits: 3
Maximum Credits: 3
This will be a workshop course dealing with a variety of techniques utilizing the camera as a tool for visual information outside of its normal use and function. The course will look at the history of cameras and the many image making devices that were invented to date.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PROG: College of General Studies

**FILMST 1580 - DIGITAL CINEMATOGRAPHY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will cover advanced video technology and professional techniques of videography. Emphasis will be placed on high image quality and meeting broadcast specifications for video and audio. Professional-quality video cameras will be covered extensively. All enrolled students will be responsible for paying a course fee for the use of equipment.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FILMST 0601

**FILMST 1600 - FILMMAKING 3: STORY TO SCREEN**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Building on your experiences in Filmmaking 1 and 2, you will continue to develop your style as a filmmaker while creating more ambitious work and improving your technical skills. Demonstrations cover HD video cameras and lenses, advanced lighting and sound techniques, creating a pre-production binder, and advanced post-production workflows using Adobe Creative Cloud software. In addition to creating short projects in class, significant outside work is required, as you will take a short film from concept to a polished final version. All enrolled students will be responsible for paying a course fee for the use of equipment.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FILMST 0601 or ENGFLM 1497; PROG: Dietrich Sch Arts and Sciences or PLAN: Digital Media Cert-1 or SUBPLAN: Media Prof Comm-Digital Media-BA

**FILMST 1901 - INDEPENDENT STUDY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Under certain circumstances students may elect to study film production on an independent basis. Such independent study will be closely supervised by an instructor and will entail the writing of a contract prior to beginning the course. Independent study will involve a minimum of eight meetings (between student and teacher) per term. All enrolled students will be responsible for paying a course fee for the use of equipment.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**FILMST 1921 - FILMMAKING 4: CAPSTONE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is a capstone course in motion picture production. You should arrive with a script for a short film which you will work on throughout the semester. The film can be any genre, and should represent the culmination of your studies in filmmaking, meeting high standards of technical and aesthetic quality. Through script workshops, pre-production reviews, and critique of rough cuts, your instructor will mentor you through the filmmaking process. All enrolled students will be responsible for paying a course fee for the use of equipment.

**Academic Career:** Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FILMST 1130 and 1600 and (ENGWRT 0560 or FILMST 1132); PROG: Arts and Sciences

BUSFIN 1030 - INTRODUCTION TO FINANCE

Minimum Credits: 3
Maximum Credits: 3
Provides a survey and analysis of the problems and tools of financial decision-making by individuals and firms. The firm's role in the market system and the nature of its objective with reference to the welfare of investors and society is also treated. An analysis of the implications of this role to decisions regarding choice among alternative investment projects and capital budgeting decisions as well as an introduction to the structure of capital asset prices and the implications for financial policies of firms and individuals are also included.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: FILMST 1130 and 1600 and (ENGWRT 0560 or FILMST 1132); PROG: Arts and Sciences

BUSFIN 1031 - INTRODUCTION TO FINANCE HONORS + 1

Minimum Credits: 1
Maximum Credits: 1

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSFIN 1311 - CORPORATE FINANCE

Minimum Credits: 3
Maximum Credits: 3
Investigates the investment and financing decisions of firms from the perspective of the corporate manager. The pedagogical format combines conceptual and case analyses so as to provide both a theoretical and practical foundation. Specific topics to be considered include the following: capital budgeting, cost of capital determination, capital structure decisions and dividend policy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSFIN 1316 - ADVANCED CORPORATE FINANCE

Minimum Credits: 3
Maximum Credits: 3
Examines a variety of applied topics in corporate finance, including mergers and acquisitions, corporate restructuring, leasing, pensions, short term financial management, and the use of derivatives in corporate finance.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSFIN 1311; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSFIN 1321 - INVESTMENT MANAGEMENT
Minimum Credits: 3
Maximum Credits: 3
Emphasizes the development of tools required for investment decision-making. Reviews various financial instruments, examines their historical performance for evidence of risk return trade-off, presents basic portfolio theory and its implications for diversification, discusses the capital asset pricing model, and empirical estimation of beta riskiness. Other topics include mutual fund performance and the theory of efficient markets.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSFIN 1326 - EFFICIENCY OF CAPITAL MARKETS

Minimum Credits: 3
Maximum Credits: 3
This course covers a central issue in finance: the Efficient Market Hypothesis (EMH). The EMH states that security prices reflect all relevant information and implies that investors cannot earn excess profits. Evidence in support of the EMH and contrary to it is studied. The implications of efficiency impact all financial managers and individuals in their financial decisions. Topics include: what actions can a financial manager take to maximize shareholder wealth, why do prices fluctuate, and technical versus fundamental analysis. The course focuses on valuation methods like DCF and CAPM.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSFIN 1327 - FUTURES AND OPTIONS

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the growing area of derivatives. It describes the attributes of futures and options and the markets in which they are traded. The course develops techniques for valuation of futures and options and describes ways in which futures and options are used for risk management.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSFIN 1328 - CAPITAL MARKETS

Minimum Credits: 3
Maximum Credits: 3
This course provides an in-depth analysis of stock and bond valuation. The analysis of bonds covers bond pricing principals, the term structure of interest rates, and fixed income portfolio management. The analysis of stocks focuses on earnings and dividend-based valuation models, and a discussion of "value investing" and indexing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSFIN 1329 - FIXED-INCOME SECURITIES
BUSFIN 1331 - FINANCIAL INSTITUTIONS AND MARKETS

Minimum Credits: 3
Maximum Credits: 3
Analysis of the behavior of financial intermediaries in the capital market. The performance of capital markets and examination of the role of regulations of financial markets, and the effects of decision-making by individuals and firms are covered. Sources of short-term and long-term financing will also be analyzed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSFIN 1341 - INTERNATIONAL FINANCE

Minimum Credits: 3
Maximum Credits: 3
This course applies the principles of finance to international issues in financial management. It deals in topics such as the valuation of foreign subsidiaries, estimating the cost of capital of foreign investments, investing in foreign multinational firms, the correlation of returns across international security markets, hedging foreign exchange risk, and the use of foreign securities markets.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSFIN 1030 (MIN GRADE 'C') and 1311 and 1321; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSFIN 1345 - MARKETS AND TRADING

Minimum Credits: 3
Maximum Credits: 3
This course gives participants a broad understanding of the operations of various financial markets with special focus on liquidity, market structure and trading. The course concentrates on the ops of exchanges, trading systems and broker-dealer intermediaries. Students will be exposed to range of issues regarding the formulation of trading decisions and market structure design and regulation. Simulation software will be used to provide experience making tactical trading decisions in different market structure environments. Students will manage equity portfolios using OTIS.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSFIN 1030 (MIN GRADE 'C') and 1311 and 1321; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSFIN 1347 - MERGERS, ACQUISITIONS AND CORPORATE STRUCTURES

Minimum Credits: 3
Maximum Credits: 3
This course examines the major structural transactions that corporations experience from an internal perspective, based on sound financial analysis conducted with an understanding of corporate governance, firm strategy, law, accounting, and organizational behavior. Particular emphasis will be on
mergers and acquisitions (M&A), and include topics in venture capital, initial public offerings, buyouts, divestitures, and bankruptcy. Readings, case study analysis, and active class discussion are emphasized. Teams of students will put the M&A process into practice by searching out and analyzing potential target firms for a major corporation and presenting their analyses and recommendations.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSFIN 1311 and 1321; PLAN: Accounting, Finance, General Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSFIN 1351 - FINANCIAL MODELING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course applies economic theories to solve various problems in financial management and investments. Using a hands-on approach in building financial spreadsheet models, the student will gain knowledge of numerical and graphical practices. These include but are not limited to asset return calculations, portfolio theory, index models, and the capital asset pricing model, option pricing models, bond pricing and investment performance analysis. MS excel is the primary tool to implement these financial models, however the course will also make use of statistics and probability.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSFIN 1030 (MIN GRADE 'C') and 1311 and 1321; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSFIN 1355 - VALUATION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines the topic of value: what it is, how to measure it, and how to use it to guide managerial decisions. This is done by accomplishing three objectives: 1) provide students with a conceptual framework for thinking about value; 2) provide students with tools for estimating value and measuring value creation and destruction; and 3) teach students how to apply valuation models in different settings.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSFIN 1311 and 1321; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSFIN 1380 - GLOBAL FINANCIAL SYSTEMS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will examine the history and development of the global economy. It will examine the structure and principal operations of the global financial system. In doing so it will explore the impact of these operations in terms of trade, financial assets, capital movements and economic growth, putting into evidence the new global processes and its impact especially over the Brics and European markets.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**BUSFIN 1390 - FINANCE INTERNSHIP**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The finance internship provides business credits for project assignments that augment a professional finance work experience.  
**Academic Career:** Undergraduate  
**Course Component:** Internship

1682
Grade Component: Satisfactory/No Credit
Course Requirements: PREQ: BUSFIN 1030 (MIN GRAD 'C'); PLAN: Finance (BSB)

**BUSFIN 1391 - SPECIAL TOPICS IN FINANCE**

Minimum Credits: 3  
Maximum Credits: 3  
Focuses on a variety of finance issues related to international business transactions. Issues addressed will vary by instructor.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**BUSFIN 1395 - FINANCE INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 3  
An independent study course for students desiring to pursue in greater depth a specific set of finance issues or problems to which they have been introduced in other finance courses. The course involves directed reading and research under the guidance of a full-time faculty member.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Letter Grade  
Course Requirements: PREQ: BUSFIN 1030 (MIN GRAD: 'C'); PLAN: Finance (BSB)

**FR 0001 - ELEMENTARY FRENCH 1**

Minimum Credits: 3  
Maximum Credits: 3  
This course will introduce the student to the oral-aural and reading-writing skills in the language. From the outset, students learn to use the spoken language and begin to work on good pronunciation, while at the same time developing the listening comprehension, reading, and writing skills.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**FR 0002 - ELEMENTARY FRENCH 2**

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces the students to the oral-aural and reading-writing skills in the language. From the outset, students learn to use the spoken language and begin to work on good pronunciation, while at the same time developing the listening comprehension, reading, and writing skills. This course is a logical continuation of elementary French 0001.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**FR 0003 - INTERMEDIATE FRENCH 1**

Minimum Credits: 3  
Maximum Credits: 3  
This course is a logical continuation of the first-year sequence. Emphasis continues to be placed on the oral aural skills, but the reading and writing skills become increasingly stressed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
FR 0004 - INTERMEDIATE FRENCH 2

Minimum Credits: 3
Maximum Credits: 3
This course is a continuation of French 0003. Reading skill is emphasized even more than in FR 0003 but continues to be accompanied by oral-aural and written work.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 0006 - SPECIAL TOPICS IN CONVERSATION AND CULTURE

Minimum Credits: 1
Maximum Credits: 6
Designed for students at the second-year level of proficiency (French 3 or French 4), this course will treat topics in French and/or francophone cultures, with a focus on oral communication.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

FR 0007 - INTENSIVE FRENCH FOR READING 1

Minimum Credits: 4
Maximum Credits: 4
This beginning course is designed solely to teach the basic vocabulary and grammar of written French in order to develop a good reading knowledge of the language in the shortest possible time.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 0008 - INTENSIVE FRENCH FOR READING 2

Minimum Credits: 4
Maximum Credits: 4
This course consists of translation and discussion in English of a variety of non-literary readings. It is a logical continuation of French 0007.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FR 0007 (MIN GRADE: 'C')

FR 0012 - FRENCH KISS: LOVE, SEX, FRANCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 0014 - INTRODUCTION TO FRENCH-SPEAKING CANADA

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to French-speaking Canada as a linguistic and cultural geopolitical entity. While principal focus will be on Quebec, we
will also examine French-speaking areas contiguous with Quebec and various isolates and extensions of this sociocultural area. We will begin chronologically with a historical presentation of the province's history as part of various geopolitical entities, and then focus on more contemporary Quebec, the bid for independence and the quiet restlessness of a "distinct society" concerned with its survival.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**FR 0020 - FRANCE IN THE 21ST CENTURY**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to lead students to a better understanding of France today. We shall pay particular attention to the perceptions the French have of themselves, and to the major aspects of contemporary French life and society.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FR 0004 or 0104 or 0021 or 0027 or 0055 or 0056 (MIN GRADE: 'C' for all listed Courses)

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**FR 0021 - APPROACHES TO FRENCH LITERATURE**

Minimum Credits: 3  
Maximum Credits: 3  
The goal of this course is to illustrate ways of looking at literary texts. We shall examine plays, short prose works and poems focusing on textural elements such as narrative technique, characterization, societal factors and language.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FR 0004 or 0104 or 0020 or 0027 or 0055 or 0056 (MIN GRADE: 'C' for all listed Courses)

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**FR 0027 - THE FRENCH ATLANTIC**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FR 0004 or 0020 or 0021 or 0055 or 0056 (MIN GRADE: 'C' for all listed Courses)

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**FR 0031 - ELEMENTARY FRENCH 1 FOR MBAS**

Minimum Credits: 2  
Maximum Credits: 2  
French 0031 is designed for business students who have no previous knowledge of French. It is an elementary language acquisition course and aims to teach students how to carry out basic functions likely to be necessary in dealing with others in the target language. The course aims to develop very basic abilities in all four language skills--speaking, listening, reading, and writing and deals with culture as an integral part of each skill.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**FR 0055 - FRENCH CONVERSATION**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to help students already familiar with the basic grammatical structure of the language to improve their facility in oral
expression.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FR 0004 or 0104 or 0020 or 0021 or 0027 or 0056 (MIN GRADE: ’C’ for all listed Courses)

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**FR 0056 - WRITTEN FRENCH 1**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to enable students to improve their understanding and use of essential elements of written French.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FR 0004 or 0104 or 0020 or 0021 or 0027 or 0055 (MIN GRADE: ’C’ for all listed Courses)

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**FR 0058 - ADVANCED FRENCH CONVERSATION**

Minimum Credits: 1  
Maximum Credits: 1  
An advanced conversation course in French for majors and non-majors who wish to maintain or improve their command of the French language through a discussion of contemporary topics.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FR 0055

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**FR 0080 - MODERN FRENCH NOVEL**

Minimum Credits: 3  
Maximum Credits: 3  
The French novel is to a great extent a genre in which psychological analysis has been brought to a high level of sophistication. This shall be studied through close analyses of approximately six works in English translation.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**FR 0100 - FRENCH FOR THE PROFESSIONS**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed for students interested in learning French for professional purposes. As an introductory course, students will learn the language practices necessary to initiate, carry out, and conclude basic professional transactions in the geographic and virtual French-speaking worlds.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PROG: (College of Business Admin) or (School of Nursing) or (Swanson School of Engineering)

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**FR 0101 - ELEMENTARY FRENCH 1**

Minimum Credits: 3  
Maximum Credits: 3  
A study of the grammar and vocabulary of elementary spoken and written French. Stresses grammatical structure and its correct application.

**Academic Career:** Undergraduate
FR 0102 - ELEMENTARY FRENCH 2

Minimum Credits: 3
Maximum Credits: 3
A continuation of elementary French 1. A study of the grammar and vocabulary of elementary spoken and written French. Stress grammar structure and its correct application.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 0103 - INTERMEDIATE FRENCH 1

Minimum Credits: 3
Maximum Credits: 3
This course is a logical continuation of the first-year sequence. Emphasis continues to be placed on the oral aural skills, but the reading and writing skills become increasingly stressed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 0104 - INTERMEDIATE FRENCH 2

Minimum Credits: 3
Maximum Credits: 3
This course is a continuation of French 0003. Reading skill is emphasized even more than in FR 0003 but continues to be accompanied by oral-aural and written work.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 0200 - FRENCH FOR THE PROFESSIONS 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FR 0100 (Min Grade 'C'); PROG: College of Business Admin or Swanson School of Engineering or School of Nursing

FR 0530 - FILM ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to major films and film movements from the origins of cinema in 1890s to the present. We will focus on the impact of technological and social changes on cinema, while placing such film-specific events as the invention of cinema, the coming of sound, or the use of color, in broader historical and cultural contexts. We will consider how major film movements have in turn influenced other national or international cinemas around the world, including mainstream Hollywood cinema.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
FR 0540 - WORLD FILM HISTORY

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to major films and film movements from the origins of cinema in 1890s to the present. We will focus on the impact of technological and social changes on cinema, while placing such film-specific events as the invention of cinema, the coming of sound, or the use of color, in broader historical and cultural contexts. We will consider how major film movements have in turn influenced other national or international cinemas around the world, including mainstream Hollywood cinema.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 1001 - POETRY

Minimum Credits: 3
Maximum Credits: 3
The study of poetry cannot be divorced from the special requirements of versification, we shall begin by examining the general aspects of French prosody. Then, the regular work of the class will be devoted to the close reading of poems by a number of poets, including Ronsard, Victor Hugo, Baudelaire, Rimbaud, Mallarme, Veraline and Apollinaire.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 1012 - 17TH CENTURY TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course will treat some aspect of the literature of the 17th century in France.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 1014 - 18TH-CENTURY TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course will treat some aspect of the literature of the 18th century in France.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 1016 - 19TH CENTURY TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course will treat some aspect of the literature of the 19th century in France.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 1018 - 20TH CENTURY TOPICS
Minimum Credits: 3  
Maximum Credits: 3  
This course will treat some aspect of the literature of the 20th century in France.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**FR 1020 - 21ST CENTURY TOPICS**  
Minimum Credits: 3  
Maximum Credits: 3  
This course will treat some aspect of literature and/or culture of the 21st century in France.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**FR 1031 - FRENCH PHONETICS**  
Minimum Credits: 3  
Maximum Credits: 3  
A systematic study of the sounds and sound patterns of French in theory and in practice. Emphasis is placed on oral work designed to perfect the student's pronunciation of the language.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**FR 1032 - ADVANCED GRAMMAR AND STYLISTICS**  
Minimum Credits: 3  
Maximum Credits: 3  
This course focuses on reading and writing as complementary communicative acts. Students engage in practical and theoretical study of French grammar, the analysis and imitation of stylistic and grammatical features found in selected French prose texts, and comparative stylistic analysis of English and French. Writing assignments include original compositions in French and short translations from French to English and English to French. Conducted in French.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**FR 1033 - BUSINESS FRENCH: LE FRANCAIS DES AFFAIRES**  
Minimum Credits: 3  
Maximum Credits: 3  
This course is a course in French language and francophone culture with a focus on business. Students will continue to perfect their general language skills and cultivate those special skills necessary to carry out commercial activities in French-speaking places.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: FR 0004 or 0104 and (FR 0020 or 0021 or 0055 or 0056); PROG: School of Arts and Sciences (UA-S) or College of Business Admin (UCBA)  

**FR 1038 - STRUCTURE OF MODERN FRENCH**  
Minimum Credits: 3  
Maximum Credits: 3
This course will offer a problem-solving approach to the syntax of modern French and will focus on rule discovery and methods of syntactic
argumentation.

**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis

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**FR 1040 - FRENCH LANGUAGE PAST AND PRESENT**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to show how the language, as we know it today, has emerged, after two thousand years of change and reconstruction, from
the language once known as Latin in the area once known as Gaul.

**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis

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**FR 1050 - FRENCH CIVILIZATION 1**

Minimum Credits: 3  
Maximum Credits: 3  
This course will follow the evolution of French culture with the ultimate objective of illustrating the ways in which contemporary France has been
formed by its rich heritage. In this first part of a two course sequence, the evolution of French society and culture from the middle ages to the French
revolution will be surveyed.

**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis

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**FR 1052 - SPECIAL TOPICS IN FRENCH CIVILIZATION**

Minimum Credits: 3  
Maximum Credits: 3  
This course, offered infrequently, will treat some aspect of French civilization.

**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis

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**FR 1053 - GLOBAL FRENCH**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis

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**FR 1059 - 20TH CENTURY FRENCH CIVILIZATION: SPECIAL TOPIC**

Minimum Credits: 3  
Maximum Credits: 3  
This course will treat some aspect of 20th century French civilization.

**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis
FR 1076 - FRENCH INTELLECTUALS

Minimum Credits: 3
Maximum Credits: 3
From environmental issues to gender politics, from the culture of capitalism to universal human rights, from media encroachment to esthetic values, French intellectuals had something to say about it all! In this class, we will discuss the tradition and the contemporary practice of public intervention on the part of writers, artists, sociologists and philosophers in modern France. The class starts with the contemporary figure of French economist Thomas Piketty, and then goes through a chronological review of the significance of enlightenment thinkers such as Voltaire and Rousseau, early critics of capitalist society such as the writers Balzac and Stendhal, Emile Zola's famous denunciation of anti-Semitism in the French military establishment at the turn of the 19th/20th century, 20th-century French existentialist Jean-Paul Sartre, feminist thinkers such as Simone de Beauvoir and Monique Wittig, environmental critics such as the un-growth advocate Serge Latouche and postmodern sociologist Jean Baudrillard.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 1085 - WOMEN'S VOICES IN FRENCH LITERATURE

Minimum Credits: 3
Maximum Credits: 3
We will read texts written by women authors in France from the middle ages to the 20th century. By following the evolution of the issues faced by women writers we will discover how a good number of the current claims were already clearly expressed several centuries ago. We will also be able to understand better what is specific to our period, and to reflect upon what it means today for a woman to inscribe her voice in a male dominated society.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: FR 0021 (Min Grade ‘C’)

FR 1088 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
Period and literary topics are determined by the instructor.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 1090 - INTRODUCTION TO TRANSLATION STUDIES

Minimum Credits: 3
Maximum Credits: 3
This course serves as a foundation course for the professional translation certificate program, and for related fields. It deals with translation theory and the general problematics of the translation process, providing a theoretical framework for translation and systematically linking theory and practice.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

FR 1902 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
This course enables the student who has completed, or nearly completed, the French major to do research under the direction of a faculty member, on a topics of mutual interest.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

FR 1903 - HONORS DIRECTED RESEARCH: FRENCH MAJORS

Minimum Credits: 1
Maximum Credits: 3
This course is offered to French majors who have high academic achievement, both in French and in general. These students are invited by the French faculty to engage in a research project under the direction of a faculty member with whom they have previously studied at the advanced undergraduate level.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

FR 1905 - INTERNSHIP IN FRENCH

Minimum Credits: 1
Maximum Credits: 6
The student will work in a job setting in which knowledge of French language and/or culture is useful.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

FR 1909 - UNDERGRADUATE RESEARCH ASSISTANTSHIP

Minimum Credits: 1
Maximum Credits: 2

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Satisfactory/No Credit

FP 0001 - ACADEMIC FOUNDATIONS

Minimum Credits: 1
Maximum Credits: 1
Academic Foundations is designed especially for first-term students as an academic orientation to the Dietrich School of Arts and Sciences. Through class work and out-of-class activities, students will gain knowledge of the educational opportunities at the University, the cultural events on and off campus, and an understanding of what it means to be a college student. All students who enroll in this course will receive a free academic planner on the first day of class.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

FP 0003 - FIRST-YEAR SEMINAR

Minimum Credits: 4
Maximum Credits: 4
First-Year Seminar (FP 0003) fulfills the Seminar in Composition requirement and includes Academic Foundations (FP 0001). Academic Foundations is designed especially for first-term students as an academic orientation to the Dietrich School of Arts and Sciences. Through class work and out-of-class activities, students will gain knowledge of the educational opportunities at the University, the cultural events on and off campus, and an understanding of what it means to be a college student. Additional meetings and activities will occur outside of class time. All students who enroll in this course will receive a free academic planner on the first day of class.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ENGCMP 0002 or 0003 or 0005 or 0010 or 0150 or 0152 or ENG 0101; TEST SCORE: SAT Verbal 560 or Higher
or ACT English 24 or Higher

FP 0006 - FIRST-YEAR SEMINAR

Minimum Credits: 3
Maximum Credits: 3
First-year Seminar (FP 0006) is offered in the spring term. It fulfills the seminar in composition requirement in the School of Arts and Sciences. This course uses readings, writing assignments, and discussions to explore a focused topic and examine ways in which high school and college-level writing differ.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: ENGCMP 0002 or 0003 or 0005 or 0010 or 0150 or 0152 or ENG 0101; TEST SCORE: SAT Verbal 560 or Higher
or ACT English 24 or Higher

GSWS 0001 - GENDER AND LEADERSHIP

Minimum Credits: 1
Maximum Credits: 1
Students residing in the women lead LLC enroll in this course, which is a one-credit experiential course in the fall term. This seminar will expose students to information about women leaders and the challenges they experience during their ascension to, and acceptance of, various leadership positions. The course will include discussion, reflection, and attendance at speakers and events within the Pitt and Pittsburgh community.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Satisfactory/No Credit

GSWS 0002 - LGBTQIA+ COMMUNITIES

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Satisfactory/No Credit

GSWS 0040 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
This lower-level course addresses a current topic in women's studies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GSWS 0100 - INTRODUCTION TO GENDER, SEXUALITY, AND WOMEN'S STUDIES

Minimum Credits: 3
Maximum Credits: 3
What is sex? What is gender? What is sexuality? How are these concepts related to culture? To nature? To help you answer these important questions, this course will introduce you to the exciting field of gender and sexuality studies. We will use a range of interdisciplinary concepts, tools, and methods to understand and analyze sex, gender, femininity, masculinity, and sexuality. Through readings, multimedia, and class discussion, we will study how gender and sexuality are socially and culturally constructed. In addition, we will consider how gender intersects with other identity
categories such as race, class, ethnicity, nation, age, ability, and sexuality. Because we all have a gender and a sexuality, this course is crucial for any profession and for understanding the world around us. Taught in discussion-based sections, it is also a great opportunity for you to develop your written and oral skills. Also, you will learn to apply the critical vocabulary used in gender studies to other fields of study. The course is open to all students regardless of background and has no pre-requisite. As a prerequisite for more advanced courses in the GSWS program and as the intro course for current or future students in the GSWS major and minor, this course will prepare you for more advanced coursework. Check the individual section to determine whether the section is a 'W' section.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**GSWS 0200 - SEX, RACE, AND POPULAR CULTURE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Popular culture is often defined as a collection of ideas, images, beliefs and practices that have become an essential component of peoples' daily lives. While popular culture is dismissed by some as merely a mass consumer culture, others acknowledge that contemporary popular cultural forms may, in keeping with a history of once contemporary popular art, culture, and literature (e.g. Dickens, Warhol, etc.) Come to be understood as essential, canonical and elite. Ultimately, these materials may be read as texts that inform our understanding of culture and social life and prompt such questions as: how does popular culture (re)construct our sense of "ordinary" life as something extraordinary? Why are some cultural forms dismissed and others more readily accepted? What social processes bring cultural forms into the public domain? This course will examine popular culture in a variety of forms such as: music, art, television, collectibles, internet, and social media. Students will consider examples from Western, non-Western, and "global" culture, but will use sex and sexuality, gender, and ideas of race to understand the relationship between popular culture, material culture, representation, and consumerism, and power and resistance. It will also address these phenomenon over time. This course will make especially strong use of contemporary and popular media such as video clips, internet media and images, and music.  

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**GSWS 0210 - WIRED WOMEN**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SU3 Elective Basis

**GSWS 0220 - CONTEMPORARY ISSUES AND ARGUMENTS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SU3 Elective Basis

**GSWS 0300 - SPECIAL TOPICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will treat a specific topic in gender, sexuality, and/or women's studies.  

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**GSWS 0350 - SPECIAL TOPICS IN GSWS**
Minimum Credits: 1
Maximum Credits: 1
This course will treat a specific topic in gender, sexuality, and/or women's studies
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

GSWS 0500 - INTRODUCTION TO FEMINIST THEORY

Minimum Credits: 3
Maximum Credits: 3
This course is an interdisciplinary introduction to the feminist ideas and debates concerning gender, women and men, and their political, social and economic positions over the last two hundred years. While we will focus on the United States, there will be some engagement with global feminist perspectives on gender, race, class, and sexuality. In keeping with the activist nature of feminist theory, this course will approach 'theory' as attempts to answer fundamental questions about the power relations that structure our everyday lives and consciousness. Theory in this sense is a tool for thinking systematically about how the world works, and for constructing arguments about how it should work. Consequently, we will pay particular attention to the (de)construction of power in both public and private relations as we critically analyze texts, discuss and present ideas in class, and complete written analyses. Students will have opportunities to apply feminist theories to their work in their home disciplines.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

GSWS 0550 - SEX AND SEXUALITIES

Minimum Credits: 3
Maximum Credits: 3
How and why did sex and sexuality become subjects of study? How are our experiences of sex and sexuality shaped by a history of 'scientific' explorations of desire? Why has sexuality become so central to our understandings of identity? What was sex like before 'sexuality' was invented? This seminar explores these questions by approaching sex and sexuality as socially, historically, and culturally contingent concepts. We will consider sex and sexuality as they are related to other categories of identity, including race, class, ethnicity, nation, and ability. Our theoretical and historical investigations will create the groundwork for understanding and rethinking how sexuality is understood in culture today.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

GSWS 0600 - GLOBAL LGBTQ LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course will survey global LGBTQ literature. We will read novels, short stories, poetry, and/or plays from a variety of different locations with a strong focus on non-Western texts. We will also read key works in literary analysis, LGBTQ theory, postcolonial theory, critical race studies, and global studies. The variety of reading will allow us to engage with different approaches to LGBTQ literature, and it will introduce you to the various ways that nation and culture shape literary production. Students will be able to identify key methods in literary analysis upon completion of the course. Seminar discussions will focus on the use of key terms and theories as well as the development of research skills so that students will be prepared to produce written research on global LGBTQ literature.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

GSWS 1026 - STATES AND SEX IN THE AMERICAS

Minimum Credits: 3
Maximum Credits: 3
This course will trace the evolution of official interest in popular reproductive practice in the United States, Latin America, and the Caribbean from
1800 to 2000. How and why have states sought to regulate sex and its consequences? How have regulations treated people differently on the basis of race, class, marital status, and sexual orientation? And what rights and protections have women and men sought to demand from states? When have they been successful? This course analyzes the Americas-wide history through which the personal became political.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

GSWS 1130 - GENDERED BODIES

Minimum Credits: 3
Maximum Credits: 3
For centuries, the biological sciences have embraced the human body as a product of nature in need of study, measurement, and treatment. Much of this knowledge has contributed to discourses of "normal" and "healthy" bodies. However, contemporary social science and feminist perspectives offer alternative readings of the human body as a social construction based upon cultural conventions and perceptions of gender, race, class, and sexuality. As Lorber and others have argued, "the result is a gendered body, produced for a gendered social world." This class will examine a wide variety of gendered social constructions of the human body at work, in sports, and in media images that reflect standards and ideals of "beauty," "health" and "deviance." We will also consider the meaning of gendered bodies in light of contemporary technologies - such as plastic surgery, steroids, infertility treatments - that help to reveal the ways in which males, females, and "others" become "men" and "women."

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GSWS 1140 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
This upper-level course addresses a current topic in gender, sexuality, or women's studies. Topic varies by instructor.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GSWS 0100 or 0200 or 0500 or 0550

GSWS 1141 - SPECIAL TOPICS IN GENDER, SEXUALITY, AND WOMEN'S STUDIES

Minimum Credits: 3
Maximum Credits: 3
This course will treat a specific topic in gender, sexuality, and/or women's studies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GSWS 1142 - FEMINIST THEORY

Minimum Credits: 3
Maximum Credits: 3
This course will provide a critical analysis of gender from a variety of feminist perspectives, with particular attention to shifts and changes in this and related categories.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GSWS 1150 - TRANSNATIONAL FEMINISMS
This class will look at the situation of women in international perspective. We will examine how feminist organizations operate in difficult national and local contexts and how women's rights have been addressed through international organizations such as the United Nations and the world court. Through case studies, we will consider a number of contentious issues in global feminism, including sexual assault, sex tourism, and the global assembly line, and the role of feminism in national liberation movements.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**GSWS 1160 - RACE, GENDER, AND CLASS**

Minimum Credits: 3  
Maximum Credits: 3  
Social diversity is a key item across academic disciplines as well as cultures at large. This course will examine the relationships among race, class, and gender in society, providing students with an understanding of how these terms get defined and mobilized in various contexts.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**GSWS 1170 - QUEER THEORY**

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to theories of how people think about and enact genders and sexualities. The course rejects both the assumption that people are naturally or normally heterosexual and the idea that being seen as "normal" should be the political or personal goal of sexual minorities. The course calls into question the idea of normal exploring how gender aims to "normalize" people by categorizing them. In recognizing the ruse of normality, the course examines sexual practices and gender expressions not attempting to dignify, deny or apologize for them.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**GSWS 1180 - POLITICS OF GENDER AND FOOD**

Minimum Credits: 3  
Maximum Credits: 3  
Food is sustenance and absolutely essential to life. But food is never simply about nutrition. Because it is fundamental to the human experience, food is also a medium for the expression of culture and social identity. Moreover, food relays complex social messages about gender, sexuality, and family. Consequently, food is also a means for expressing the social and symbolic use of power and control in which social inequalities are expressed in culinary forms. This course will examine food from the vantage point of gendered systems of production, distribution, and consumption as we consider: How does your food come to your table (or not) and what are the political implications of personal tastes? By the end of this course, students will be able to: 1) apply anthropological and feminist theories to food and eating in a cross-cultural perspective; 2) understand how gender, race and class influence our access to and perspective on food; and 3) make connections between eating and cultural identities and beliefs.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**GSWS 1190 - MASCULINITIES**

Minimum Credits: 3  
Maximum Credits: 3  
An interdisciplinary examination of theories and select cultural constructs of masculinity, as related to and distinct from male bodies. Masculinity will be considered in its relation to race, ethnicity, nation, class, ability, and sex. Readings will likely come from literary studies, film studies, cultural studies, sociology, anthropology, linguistics, history, and other fields.
GSWS 1200 - TRANSGENDER STUDIES

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to the interdisciplinary field of transgender studies. The course is first and foremost about trans contributions to our shifting understandings of sex, gender, identity, and the body in theory, culture, art, psychology, science, and activism. Some of the topics we will examine include: the history and emergence of transgender theory, global understandings of trans issues, feminist/queer encounters with trans theories, the politics of trans visibility, and trans lives in film and literature. The course will cover major topics within the discipline, including queer/trans "border wars," intersectional approaches in trans theory, the various meanings and uses of "trans" in different disciplines, and the relationship between trans theories and existing models of sex, gender, and sexuality. We'll pay close attention to how transgender studies has challenged and/or enhanced thinking in feminist and queer theory.

GSWS 1210 - GENDER AND THE DIGITAL

Minimum Credits: 3  
Maximum Credits: 3  
This course will explore the relationship between identity, media, and digital culture, specifically how gender is constructed and contested through forms of media. Students will consider how media also informs notions of race, class, sexuality, religion, and ethnicity, among other identity markers. This course will rely on thoughtful and academically stimulating analyses of media, such as television, film, music, advertising, online spaces, video games, among others, and in various combinations.

GSWS 1220 - WOMEN OF COLOR FEMINISM

Minimum Credits: 3  
Maximum Credits: 3  

GSWS 1235 - LANGUAGE, GENDER AND SOCIETY

Minimum Credits: 3  
Maximum Credits: 3  
As a field of research, language and gender studies is interdisciplinary and relatively new. These studies seem to discover the nature of gender-related differences in language and their causes and effects. Gender here refers to social categories based on sex but encompassing behavior, roles and images that, although not biologically determined, are regarded by a society as appropriate to its male or female members. What is seen as appropriate to each gender thus differs in different societies and eras. Explanations for gender thus differ in different societies and eras. Explanations for almost all observed male/female language differences are to be found less in the biological constitution of the human body and more in the social and psychological formation of the human subject. These are the issues we will be concerned with in this course. Is women's language use in systematic ways different from that of men? If it is different, how is it different? Why is it different, what sorts of explanations are there? And maybe most important, does a difference of language use matter?
GSWS 1450 - GENDER AND SUSTAINABILITY

Minimum Credits: 3
Maximum Credits: 3

This course will critically analyze sustainability from gendered perspectives. It will take a three-pronged approach to the study of sustainability and gender, engaging with the economic, social, and environmental components that contribute to our understandings of sustainability and sustainable development. Through readings, written assignments, and class discussions, students will examine the intersectionality of gender and sustainability with class, race, ability, age, nationality, religion, power, politics, social movements, and health from local and global perspectives. Students will critique practical applications of sustainable development and the role of gender in creating a more sustainable future. Taking an interdisciplinary approach, this course will draw on perspectives from anthropology, sociology, environmental studies, gender and development, human geography, public and international affairs, political science, economics, engineering, geology, business, urban studies, and a range of health sciences. Students will have the opportunity to learn about gender and sustainability through case study analyses stemming from a variety of geographic regions. There are no prerequisites for this course, although GSWS 0100 Introduction to Gender, Sexuality and Women's Studies, GSWS 0500 Introduction to Feminist Theory or another course on gender is recommended.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GSWS 1460 - GENDER, SEXUALITY, AND CHILDHOOD IN A GLOBAL CONTEXT

Minimum Credits: 3
Maximum Credits: 3

Although childhood is often conflated with a biological category based on an immature body, in reality it is much more. Instead, this course examines the ways in which childhood is a discursive and continuously shifting category, one that changes across time and place. This course will introduce students to the study of children and childhood in a cross-cultural context and will pay particular attention to the ways in which notions of childhood, and the experience of being a child, draw from and reproduce understandings of gender and sexuality as they intersect with race, class, ethnicity, etc. Through readings, lectures, and films, we will also consider the meaning of gendered childhoods in light of contemporary forms of conception, children's culture (media, toys and artifacts, stories), child labor and play, and ritual and coming of age ceremonies. An analysis of these contemporary phenomenon highlight local and regional notions of childhood and their intersection with broader global patterns. In addition to lectures, a portion of each class will be devoted to group discussions in which students are encourage to engage with the course readings. Students will give presentations and assist with discussion facilitation. We will also view films. Evaluations will be based on the student's participation in these discussions, as well as two exams, and a series of four writing assignments.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

GSWS 1522 - SEX AND RACISM

Minimum Credits: 3
Maximum Credits: 3

This course affords an opportunity to explore sex, sexism, and racism; to examine the historical development and economic impact of racism in America; and to analyze the conceptual framework, the research methods, and approaches from which past and current studies on sex, sexism, and racism have been and are being developed. The course will also explore sex and racism as a multi-dimensional continuum, and solutions to sexism and racism.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GSWS 1620 - WOMEN AND RELIGION
This course will examine the role of women in the Bible, the way in which such roles were constructed and reinforced in the Western tradition, and the contemporary viability of this tradition as a meaningful one in our own world. Specifically, we will consider the polarity of "mother" vs. "fallen woman," as the prototypical models of female behavior and social acceptance, and the way in which "salvation" is construed for each type.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

### GSWS 1622 - WOMEN AND POLITICAL THEORY

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC Elective Basis

### GSWS 1900 - INTERNSHIP

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **An opportunity to extend academic training to a practical work experience in an area where the student has gained some expertise.**  
- **Academic Career:** Undergraduate  
- **Course Component:** Internship  
- **Grade Component:** Satisfactory/No Credit

### GSWS 1901 - INDEPENDENT STUDY

- **Minimum Credits:** 1  
- **Maximum Credits:** 3  
- **A variety of individual research and reading projects may be undertaken under the supervision of a core faculty member.**  
- **Academic Career:** Undergraduate  
- **Course Component:** Independent Study  
- **Grade Component:** Letter Grade

### GSWS 1902 - UNDERGRADUATE RESEARCH

- **Minimum Credits:** 1  
- **Maximum Credits:** 3  
- **Undergraduate students engage in research projects under the direction of a core faculty member. Consent of instructor required.**  
- **Academic Career:** Undergraduate  
- **Course Component:** Independent Study  
- **Grade Component:** LG/SNC Elective Basis

### GSWS 1910 - CAPSTONE

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Designed as a capstone, this course is a seminar that allows students to explore feminist theory and methodology in greater depth. We will pay particular attention to the current state of feminist theory as we consider future directions and challenges, and address the ways in which feminist theories and methodologies can inform research in other disciplines. Students will respond to a series of intense readings that focus on the intersections of feminist theory with other theoretical approaches, such as queer theory, environmental ethics, and critical race theory, among others. Using this theoretical foundation, students will construct a research project of their own design that will apply academic work to a "real world" setting and prepare students for careers and/or graduate study.**
GEOL 0055 - GEOLOGY LABORATORY

Minimum Credits: 2
Maximum Credits: 2
The course consists of a laboratory structured to give students an overview as well as hands-on experience with the methodology used by earth scientists to study geologic processes.

GEOL 0060 - HISTORY OF THE EARTH

Minimum Credits: 4
Maximum Credits: 4
This course surveys the evolution of the earth and its inhabitants from its origins to the present. Lectures and lab emphasize the identification and interpretation of rocks, geologic features, and geologic maps. Lab work also includes fossil identification, stratigraphic correlation, and sedimentary facies analysis.

GEOL 0800 - GEOLOGY

Minimum Credits: 3
Maximum Credits: 3
Geology is the study of how the earth works. This class covers the classification and origin of basic rocks and minerals; examines the role of plate tectonics in shaping the earth and producing such hazards as earthquakes and volcanoes; and examines the forces that shape beaches and rivers and sometimes threaten our lives and property. We also survey the evidence for changing climate and the future of such resources as groundwater, fossil fuels, and ores.

GEOL 0802 - GEOLOGY OF THE NATIONAL PARKS

Minimum Credits: 3
Maximum Credits: 3
The magnificent scenery of the national parks provides a backdrop to an exploration of the basic geological principles that govern the creation and development of landscapes. The geological history of the North American continent will be explored in order to provide a framework in which to understand the development of the landscapes of our country.

GEOL 0820 - NATURAL DISASTERS
Minimum Credits: 3
Maximum Credits: 3
The geologic, hydrologic and atmospheric processes that impact the human environment in catastrophic ways are examined in this course. Natural disasters surveys energy cycles, plate tectonics with an emphasis on how they produce earthquakes, volcanic eruptions, tornadoes, hurricanes, tsunamis, wildfires, flooding, landslides, climate change and mass extinctions. Students will get hands on experience in recitation. This course serves as an introductory course for three majors in geology and planetary science.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GEOL 0840 - ENVIRONMENTAL SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This class is an interdisciplinary introduction to the science underlying environmental issues. Focusing on the principles of geology, biology, and chemistry and in their application to human impacts on the environment, strategies for sustainable management of environment and natural resources, and global change.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GEOL 0850 - NATURAL SCIENCES 1

Minimum Credits: 3
Maximum Credits: 3
This 2-semester course will present non-science majors with a comprehensive picture of the natural world. Topics will include: the solar system; laws of motion; energy; structure of matter; the earth; cosmology; the science of living things; the living cell; genetics; evolution. Emphasis will be on fundamental concepts that underlie our present understanding. Connections will be made to historical developments and to scientific and technological issues that impact individuals and society.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GEOL 0851 - NATURAL SCIENCES 2

Minimum Credits: 3
Maximum Credits: 3
This 2-semester course will present non-science majors with a comprehensive picture of the natural world. Topics will include: the solar system; laws of motion; energy; structure of matter; the earth; cosmology; the science of living things; the living cell; genetics; evolution. Emphasis will be on fundamental concepts that underlie our present understanding. Connections will be made to historical developments and to scientific and technological issues that impact individuals and society.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GEOL 0860 - ENVIRONMENTAL GEOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course takes an integrated earth systems approach to understanding our planet and its resources. We will investigate geologic processes and hazards (e.g., earthquakes, volcanoes, landslides, and weather hazards), geologic resources (water, soil, minerals, energy) and the local and global ramifications of human interaction with the earth (e.g., air, soil and water pollution, ozone depletion, and climate change). This course also serves as an introductory course for three majors in the department of geology and planetary science.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GEOL 0870 - THE PLANETS

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the worlds of our solar system. We will make extensive use of the most recent and dramatic images to discuss the nature, origin, and history of the planets and moons of our solar system.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GEOL 0871 - INTELLIGENT LIFE IN THE UNIVERSE

Minimum Credits: 3
Maximum Credits: 3
This course attempts to answer the question of whether intelligent life exists elsewhere in the galaxy by considerations of the origin and subsequent evolution of the universe, our solar system, terrestrial life, and the human species.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GEOL 0890 - OCEANOGRAPHY

Minimum Credits: 3
Maximum Credits: 3
The oceans play a central role in global climate and supporting a stunning diversity of life. This survey of oceanography examine the major physical, chemical, and biological processes that shape the modern oceans and the life they contain.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

GEOL 1001 - MINERALOGY

Minimum Credits: 4
Maximum Credits: 4
Physics and chemistry of minerals. Includes physical properties, crystal chemistry, crystal structure and symmetry, mineral identification using a petrographic microscope, and the processes of mineral formation and breakdown.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: CHEM 0110 and GEOL 0055

GEOL 1002 - HUMAN DRIVEN GLOBAL CHANGE

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the quantification of human activities and human environmental impacts that form the basis for scientific inquiry in the `Anthropocene.` The course will emphasize both reconstruction of early human activities from environmental records (e.g., the advent of soil erosion or mining from sediment records) and analysis and interpretation of modern `big-data` resources (e.g., transformation of census records to chemical fluxes). Class examples and problems will focus on policy relevant facets of human activities, ranging from nutrient budgets to carbon dynamics to water and sediment fluxes.
Academic Career: Undergraduate
GEOL 1003 - IGNEOUS & METAMORPHIC PETROLOGY

Minimum Credits: 4
Maximum Credits: 4
A lecture and laboratory course concerned with a study of the origin, occurrence, identification, and classification of igneous and metamorphic rocks. The primary purpose of the course is to familiarize the student with the physical and chemical processes that control the formation of the main igneous and metamorphic rock types.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GEOL 1030 and GEOL 1445

GEOL 1015 - GEOLOGY COLLOQUIUM

Minimum Credits: 1
Maximum Credits: 1
Geology colloquium is open to undergraduate students in geology and planetary science. It is a formalization of the seminar series with weekly guest speakers from industry, academia and government. Each seminar will focus on a different research topic in earth sciences describing on-going projects of interest to students. The course may be taken multiple times.

Academic Career: Undergraduate
Course Component: Colloquium
Grade Component: Satisfactory/No Credit

GEOL 1020 - SEDIMENTOLOGY AND STRATIGRAPHY

Minimum Credits: 4
Maximum Credits: 4
Sedimentology is the study of the processes that produce modern and ancient sedimentary deposits. The lectures will focus on a variety of modern sedimentary systems (rivers, deltas, beaches, etc.) As well as their ancient equivalents. The class culminates with an exploration of how long-term changes in sediment supply and sea level act to shape regional-scale sedimentary sequences. The lab focuses on rock identification and interpretation and on a variety of stratigraphic problems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GEOL 0055 or 1001

GEOL 1030 - THE ATMOSPHERE, OCEANS AND CLIMATE

Minimum Credits: 3
Maximum Credits: 3
This course will examine the atmospheric and oceanic interactions that determine the nature of the global climate system. Specifically, the course will explore the origin, evolution, and structure of the earth's oceans and atmosphere, the earth's energy balance, atmospheric circulation patterns, and surface and deep ocean currents. The course will also consider records of past climate, evidence for recent warming, climate change projections, and climate change policy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GEOL 1045 - STATISTICS FOR EARTH SCIENCE
Minimum Credits: 3  
Maximum Credits: 3  
A statistics course geared toward environmental science and geology majors with an emphasis on applying data analysis and statistical techniques to environmental data. Topics will include: visualizing data, summary statistics, correlation, selected parametric statistics (t-tests, general linear models), selected non-parametric methods, statistical inference, and experimental design.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: STAT 0200 or STAT 0800 or STAT 1000 or STAT 1100

GEOL 1050 - SURFACE WATER HYDROLOGY  
Minimum Credits: 4  
Maximum Credits: 4  
This course shall provide an Earth systems science overview of the processes that govern the hydrologic cycle including precipitation, evapotranspiration, runoff and discharge, infiltration, and groundwater. The course shall emphasize the movement of water through the atmosphere, over the land surface, and within the unsaturated and saturated zones.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (GEOL 0800 or 0820 or 0840) and (MATH 0120 or 0220)

GEOL 1051 - GROUNDWATER GEOLOGY  
Minimum Credits: 4  
Maximum Credits: 4  
This course focuses on physical and chemical processes controlling water movement and composition in sub-surface environments. The lab focuses on practical field methods for the characterization of groundwater.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: GEOL 0055 and CHEM 0110 and (MATH 0120 or MATH 0220)

GEOL 1052 - PALEOCLIMATOLOGY  
Minimum Credits: 3  
Maximum Credits: 3  
This course presents the different types of data used to study the earth's climatic history and long-term climatic variability. Particular emphasis is given to the climatic changes during the late Cenozoic -- the so called glacial ages. Topics of discussion include time scales of climatic change, types of paleoclimatic records and their limitations, numerical climate models, the causes of climatic change, and the importance of paleoclimatic research in forecasting the future.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: GEOL 0055

GEOL 1055 - ENVIRONMENTAL ETHICS, SCIENCE, AND PUBLIC POLICY  
Minimum Credits: 3  
Maximum Credits: 3  
This course examines the interrelationships among environmental science, ethics, and policy. It covers such topics as origin and development of the environmental movement, environmental values and attitudes, enactment and mechanics of environmental regulations and statutes, environmental economics and politics, and future environmental scenarios. The various socio-economic, legal, and political implications will be scrutinized within the context of specific case studies of environmental/ecological concern, ranging from local to global.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1056 - UHC ENVIRONMENTAL ETHICS, SCIENCE AND PUBLIC POLICY

Minimum Credits: 3
Maximum Credits: 3
This course examines the interrelationships among environmental science, ethics, and policy. It covers such topics as origin and development of the environmental movement, environmental values and attitudes, enactment and mechanics of environmental regulations and statutes, environmental economics and politics, and future environmental scenarios.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1060 - GEOMORPHOLOGY

Minimum Credits: 4
Maximum Credits: 4
This course is a survey of the major landform features found on the earth's surface. Each landform type is first described qualitatively and then examined in terms of the processes, such as stream flow or glacial activity, which cause its development. The purpose of the course is to familiarize students with geomorphic principles.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1100 - STRUCTURAL GEOLOGY

Minimum Credits: 4
Maximum Credits: 4
A course devoted to the study of folded, faulted, flowed, sheared, and jointed rocks with the aim of preparing a student to recognize and interpret deformed rocks. The evolution of mountain belts and deformation related to this process are emphasized.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GEOL 0055; CREQ: GEOL 1003 and (GEOL 1020 or ANTH 1520)

GEOL 1200 - UHC PALEONTOLOGY

Minimum Credits: 3
Maximum Credits: 3
Nothing endures but change.' We cannot understand the world we live in, nor any of a host of predicted future trends, without exploring the past. That's where paleontology comes in - the fossil record provides a wealth of insight into the evolution (and revolution) of life on earth. In this class we will explore both the methods and the limitations of using fossils to interpret past environments, ecologies, systematic relationships, and the events that have fundamentally reorganized the earth's biota. Short in-class labs will provide hands-on access to fossil specimens of plants and invertebrate and vertebrate animals. We'll also examine paleontology's role in society ' its historical development, how and why it captures the public imagination, and its portrayal in the news and popular media.

Academic Career: Undergraduate
GEOL 1240 - EVOLUTION OF THE VERTEBRATES

Minimum Credits: 3  
Maximum Credits: 3  
This class focuses on the evolution and extinction of vertebrates. The class may take a broad view (e.g. all vertebrates) or a narrower focus that allows a deeper exploration of the paleo biology and paleoecology of selected groups of vertebrates (e.g. dinosaurs and mammals).  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

GEOL 1312 - ENVIRONMENTAL LAW AND POLICY

Minimum Credits: 3  
Maximum Credits: 3  
The survey course will examine the role of law and policy in regulating human impact on the environment. topics include the history and development of U.S. environmental law; theoretical approaches to environmental protection; mechanisms employed in environmental laws and regulation; the roles of the legislative, executive, and judicial branches of government in developing and implementing environmental law and policy; an overview of the principal environmental laws at the federal and state levels; the role of citizens in development and enforcement of environmental law; and constitutional constraints on government authority.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

GEOL 1313 - COM ENVIRONMENTAL PROFESSIONALS

Minimum Credits: 3  
Maximum Credits: 3  
This course serves as a w-course for environmental studies. We will sample various tools and methods (typical "professional" tasks such as memos and letters, building into comprehensive assignments such as case studies), all while concentrating on how audience and purpose affect communication.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ANY ENGCMP Course; PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1315 - COMMUNICATION IN GEOSCIENCES/WRIT REQUIREMENT

Minimum Credits: 3  
Maximum Credits: 3  
This class is perfect preparation for undergraduate research or graduate school. It will introduce students to the main scientific journals, how to read and assimilate the scientific literature, discuss how to give oral presentations, and address how to write clear scientific papers. Students will also explore topics of potential interest that they either propose or select from a provided list.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: GEOL 0060 or 1003 or 1020 or 1030 or 1051 or 1060 or 1515 or 1100 or 1641

GEOL 1330 - SUSTAINABILITY FLASH LAB
Minimum Credits: 3
Maximum Credits: 3
Sustainability involves a systems approach. By exploring the inputs and outputs of energy and resources, we will ask broad questions: How do we measure production and consumption? How do geographical and socio-economic environments affect these things? How do we go beyond traditional measurements to quantify more comprehensive impacts and life-cycles? Answering these larger questions begins on a smaller, very specific, and personal scale: Where you live, and how you live. By examining and measuring resource use (including electricity, water and sewage, garbage and recycling, energy use, and transportation), we trace inputs and outputs to their source/destination, and begin to unravel and understand the complex web of production, distribution, delivery, and environmental consequences. We will investigate how these metrics change due to location and societal practices, as well as changes created through conservation and public policy. Eventually, it is the aim of this course to also reflect, at cultural and philosophical levels, on our energy/resource usage and underlying causalities thereof.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

GEOL 1331 - HEALTH AND SAFETY (HAZWOPER)

Minimum Credits: 3
Maximum Credits: 3
Hazwoper (hazardous waste operations and emergency response) is a 40-hour course that promotes awareness of safety and response plans for those who may work with chemical and other hazards in the work-site. Students will learn how hazardous materials are handled and identified; human responses to exposure; learn what to do in case of site emergencies; use appropriate safety methods and work practice controls; and understand labels that are used to alert personnel of danger involving hazardous material. (Many employers in environmental consulting firms and other industries require 40-hour osha training.) The course will count as an elective in the environmental studies major.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1332 - MANAGEMENT OF ENVIRONMENTAL AND NONPROFIT ORGANIZATIONS

Minimum Credits: 3
Maximum Credits: 3
Enthusiasm goes a long way in the nonprofit environmental world, but volunteers and professionals alike increasingly need more and more skills in order to make a lasting impact. It can be overwhelming even to those who already know what to expect. This course covers the "inner workings" of environmental organizations. We'll go beyond the slogans, junk mail, and big events to study what's behind the nonprofit world, what it takes to succeed, and why advocacy is so important... and so difficult! Speakers from the environmental community will share their experiences and perspectives each week, and a wide range of readings and assignments are designed to have students take a deep look and to experience some of this world, too.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1333 - SUSTAINABILITY

Minimum Credits: 3
Maximum Credits: 3
Sustainability is a term that has many meanings, depending on who's using it, and we will cover most of them in this class, from green campuses to green-washing. The class features guest speakers from the academic, governmental, nonprofit and business sectors to offer as many perspectives as possible on sustainability topics. The real focus of the class, though, is the development of sustainability projects on campus and in the Pittsburgh community. Students also participate in sustainability-related events and field trips with the opportunity to present their work to a larger audience at the end of the semester.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1334 - ENVIRONMENTAL POLICY

Minimum Credits: 3
Maximum Credits: 3
Environmental public policy, 3.0 - focus on environmental ethics and its application in real-world context, including the regulatory and policy interface in the public arena. Discusses ethics surrounding national and global environmental issues, consumer choices, and ongoing public debate.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1335 - ENVIRONMENTAL ISSUES: AIR QUALITY

Minimum Credits: 3
Maximum Credits: 3
Pittsburgh has had a checkered past when it comes to air quality issues, and faces an uncertain future. Once known as "hell with the lid off" due to industrial emissions, Pittsburgh and its environs once had some of the worst air in the nation. In 1948, a noxious cloud killed 22 in nearby Donora and sickened thousands. But Pittsburgh also became one of the first American cities to pass legislation aimed at cleaning its air. Today it faces a new threat from emissions from coal-burning utilities in Ohio and west Virginia. This course is one in a series that focuses on the history, progress and current events of environmental issues in southwestern Pennsylvania that also have application throughout the region and U.S. emphasis is on a balanced presentation of the issues, discussions of various approaches to solving problems and development of writing skills. To accomplish this, the course will (1) focus on a single environmental issue, (2) structure individual classes around a single aspect of that issue, (3) feature guest lectures and presentations by government regulators and policymakers, interest groups, corporate leaders and experts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1336 - ENVIRONMENTAL ISSUES: AIR QUALITY (W)

Minimum Credits: 3
Maximum Credits: 3
This course is the same as GEOL 1335, but it fulfills the University Writing Requirement. Pittsburgh has had a checkered past when it comes to air quality issues, and faces an uncertain future. Once known as "hell with the lid off" due to industrial emissions, Pittsburgh and its environs once had some of the worst air in the nation. In 1948, a noxious cloud killed 22 in nearby Donora and sickened thousands. But Pittsburgh also became one of the first American cities to pass legislation aimed at cleaning its air. Today it faces a new threat from emissions from coal-burning utilities in Ohio and west Virginia. This course is one in a series that focuses on the history, progress and current events of environmental issues in southwestern Pennsylvania that also have application throughout the region and U.S. emphasis is on a balanced presentation of the issues, discussions of various approaches to solving problems and development of writing skills. To accomplish this, the course will (1) focus on a single environmental issue, (2) structure individual classes around a single aspect of that issue, (3) feature guest lectures and presentations by government regulators and policymakers, interest groups, corporate leaders and experts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)
GEOL 1337 - ENVIRONMENTAL ISSUES: WATER QUALITY

Minimum Credits: 3  
Maximum Credits: 3  
This course will focus on environmental issues related to water quality, including the effects of Marcellus Shale waste water on public and private drinking water supplies. The emphasis will be on southwestern Pennsylvania, but we’ll look at the effects of Marcellus Shale industry operations on a state and regional basis too. Emphasis is placed on a balanced, in depth presentation of the issues that must be addressed to realistically solve modern environmental problems. This will be accomplished by (1) focusing on a single environmental issue of relevance to southwestern Pennsylvania (2) structuring weekly sessions around a single aspect of that issue, and (3) giving students an opportunity to learn about the issues from local professionals and community leaders active in these fields.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1338 - ENVIRONMENTAL ISSUES: WATER QUALITY (W)

Minimum Credits: 3  
Maximum Credits: 3  
This course is the same as GEOL 1337, but it fulfills the University Writing Requirement. This course will focus on environmental issues related to water quality, including the effects of Marcellus Shale waste water on public and private drinking water supplies. The emphasis will be on southwestern Pennsylvania, but we’ll look at the effects of Marcellus Shale industry operations on a state and regional basis too. Emphasis is placed on a balanced, in depth presentation of the issues that must be addressed to realistically solve modern environmental problems. This will be accomplished by (1) focusing on a single environmental issue of relevance to southwestern Pennsylvania (2) structuring weekly sessions around a single aspect of that issue, and (3) giving students an opportunity to learn about the issues from local professionals and community leaders active in these fields.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1339 - ENVIRONMENTAL ISSUES: MINING AND GAS DRILLING ISSUES

Minimum Credits: 3  
Maximum Credits: 3  
This term's focus is on mining issues. Mining and oil and gas extraction has a long, important and sometimes dark history in Pennsylvania. Almost since the first black chunk was pried from the first mine, coal has been king in the keystone state. It has fueled industries, heated homes, and powered trains and river tugs. It has been politically powerful. It has also colored streams, creeks and rivers orange and left them dead. It has scarred the rolling Allegheny hills, first with strip mines and now with “valley fills.” how is mining's environmental legacy being addressed? How effective are current laws in regulating the industry? What's the latest, best, mining technique, and what is its public impact? What has been industry's response? What impacts,"

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1340 - ENVIRONMENTAL ISSUES: MINING AND GAS DRILLING ISSUES (W)

Minimum Credits: 3  
Maximum Credits: 3  
This course is the same as GEOL 1339, but it fulfills the University Writing Requirement. This term's focus is on mining issues. Mining and oil and
gas extraction has a long, important and sometimes dark history in Pennsylvania. Almost since the first black chunk was pried from the first mine, coal has been king in the keystone state. It has fueled industries, heated homes, and powered trains and river tugs. It has been politically powerful. It has also colored streams, creeks and rivers orange and left them dead. It has scarred the rolling Allegheny hills, first with strip mines and now with "valley fills." how is mining's environmental legacy being addressed? How effective are current laws in regulating the industry? What's the latest, best, mining technique, and what is its public impact? What has been industry's response? What impacts, what's different and the same about the latest extractive industry in the state: Marcellus Shale natural gas development. Guest speakers from industry will be scheduled."

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1341 - ENVIRONMENTAL ISSUES: PARKS AND FORESTS

Minimum Credits: 3
Maximum Credits: 3
This course is one in a series that focuses on environmental issues in southwestern Pennsylvania. Forests are made up of trees. "Timber " is what they yell when the trees are cut and fall. With maturing forests scraping the sky in Pennsylvania and other parts of the northeastern united states, and controversial restrictions on national forest timbering in the pacific northwest, there is tremendous pressure to cut the local hardwood forests. But unlike the turn of the century when all of Penn's woods was clear-cut, there is a growing ethic that believes trees are more valuable growing than cut - for recreation and environmental reasons. This course on forest and parks issues is the fourth in a series that focuses on environmental and public policy issues in south western Pennsylvania. Through newspaper articles, field trips and guest speakers, the course will explore the issues and conflicts that abound in our wildlands and urban woods. Emphasis is on a balanced presentation of the issues, discussions of various approaches to solving problems and development of writing skills through a number of short assignments based on readings and presentations of guest speakers.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1342 - ENVIRONMENTAL ISSUES: PARKS AND FORESTS (W)

Minimum Credits: 3
Maximum Credits: 3
This course is the same as GEOL 1341, but it fulfills the University Writing Requirement. This course is one in a series that focuses on environmental issues in southwestern Pennsylvania. Forests are made up of trees. "Timber " is what they yell when the trees are cut and fall. With maturing forests scraping the sky in Pennsylvania and other parts of the northeastern united states, and controversial restrictions on national forest timbering in the pacific northwest, there is tremendous pressure to cut the local hardwood forests. But unlike the turn of the century when all of Penn's woods was clear-cut, there is a growing ethic that believes trees are more valuable growing than cut - for recreation and environmental reasons. This course on forest and parks issues is the fourth in a series that focuses on environmental and public policy issues in south western Pennsylvania. Through newspaper articles, field trips and guest speakers, the course will explore the issues and conflicts that abound in our wildlands and urban woods. Emphasis is on a balanced presentation of the issues, discussions of various approaches to solving problems and development of writing skills through a number of short assignments based on readings and presentations of guest speakers."

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)

GEOL 1410 - EXPLORATION GEOPHYSICS

Minimum Credits: 3
Maximum Credits: 3
An introduction to the theory, methods, and instrumentation used in exploration geophysics. Topics include gravity, magnetics, electromagnetics, and seismic.
GEOL 1413 - GEOPHYSICAL WELL LOGGING

Minimum Credits: 3
Maximum Credits: 3
An introduction to the interpretation of well logs derived from various geophysical measurements of down-hole rock properties. Students will learn to infer lithology, fluid characteristics, production zones, and other features useful to both geologists and petroleum engineers. A class in sedimentology and stratigraphy is recommended but not required.

GEOL 1445 - GIS, GPS, AND COMPUTER METHODS

Minimum Credits: 3
Maximum Credits: 3
The goals of this course are to gain expertise in spatial analysis and geographical information systems.

GEOL 1446 - ADVANCED GEOGRAPHICAL INFORMATION SYSTEM

Minimum Credits: 3
Maximum Credits: 3
Using advanced geographical information systems technologies and geospatial analysis techniques students will extend their knowledge of geographical information systems to include raster, geostatistical, network, model, and 3d/4d based analysis completing complex analysis of real world data sets.

GEOL 1460 - INTRODUCTION TO REMOTE SENSING

Minimum Credits: 3
Maximum Credits: 3
This course provides a foundation in the theory, techniques and applications of remote sensing and geospatial data visualization spanning the electromagnetic spectrum. Topics include light/matter interaction, optics and sensor design, image analysis, as well as current applications of remote sensing to science and engineering problems facing local and global populations. The course and integrated image-processing laboratory are designed to provide the student with a strong foundation of remote sensing science.

GEOL 1510 - AQUATIC AND SEDIMENTARY GEOCHEMISTRY

Minimum Credits: 3
Maximum Credits: 3
This course will examine the chemistry and geochemistry of modern and ancient aquatic and sedimentary systems, including oceans and fresh waters. Students will gain an understanding of the biogeochemical processes occurring in aquatic systems, and the geochemical signatures they leave.
in the sedimentary record.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (CHEM 0110 and GEOL 0055) or GEOL 0800 or 0860

**GEOL 1515 - ENVIRONMENTAL GEOCHEMISTRY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course explores the complex interactions of earth's rock, water, air, and life systems that determine the chemical characteristics of our environment. We will examine the distribution, cycling, and transport of chemical compounds in the atmosphere, hydrosphere, and terrestrial environment on local and global scales. Topics will include water chemistry, organic and inorganic pollution and related toxicology, hazardous wastes, acid rain, acid mine drainage, photochemical smog, ozone depletion, and global climate change. A class project involves chemical analysis of student-provided water samples.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: CHEM 0110 AND GEOL 0055; PLAN: Geology or Environmental Studies or Environmental Geology or Environmental Science (BS)

**GEOL 1602 - MINERAL AND ENERGY RESOURCES**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course deals with the geology of the fossil fuels - oil, gas, and coal -- and the more important industrial rocks and minerals such as evaporites, phosphate rocks, crushed stone, clay, sand and gravel, and building stone. Emphasis is on the processes which form the commercial accumulations of these materials and the geological setting in which they occur. Their geographic distribution is also considered.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**GEOL 1641 - ECOSYSTEM ECOLOGY**

**Minimum Credits:** 4  
**Maximum Credits:** 4  
This course will provide students with an introduction to the principles of ecosystem ecology and associated applications to environmental change. Broad course themes include descriptions of the physical environment, community ecology, ecosystem ecology, ecological biogeography, and human ecology.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**GEOL 1701 - GEOLOGY OF THE PLANETS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
An introduction to the geological processes and resulting landforms occurring on the surfaces of the planets of our solar system. We will make extensive use of recent spacecraft imagery and data.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: GEOL 0055
GEOL 1853 - WATERSHED HYDROLOGY AND BIOGEOCHEMISTRY

Minimum Credits: 3
Maximum Credits: 3
Understanding the science of watersheds is critical to improving water quality. This course will examine surface water hydrology, biogeochemistry, and management of watersheds. In addition, we will focus on how varying land uses influence the dynamics of hydrology and biogeochemistry across these systems. Student will develop an understanding of the biogeochemistry of various major elements in watersheds, including nitrogen, carbon, sulfur, and mercury, and how these elemental fluxes are exchanged through atmospheric-terrestrial-aquatic interactions. Students will be expected to demonstrate critical thinking, communication, and analytical skills through student-led lectures, journal discussions, and projects.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: GEOL 0110, GEOL 1641

GEOL 1900 - INTERNSHIP

Minimum Credits: 1
Maximum Credits: 4
This course places the student in an "on-the-job" setting in which he/she receives practical experience in a supervised training environment.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

GEOL 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 4
This course permits undergraduates to explore specific topics in the geological sciences. The course is designed in a more flexible format than a directed study, stressing a higher degree of independent library research.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

GEOL 1903 - UNDERGRADUATE RESEARCH

Minimum Credits: 1
Maximum Credits: 4
This course provides the opportunity for undergraduates to obtain "hands on" experience in geology by actively interacting with faculty members on research projects.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

GEOL 1904 - DIRECTED READING

Minimum Credits: 4
Maximum Credits: 4
This course explores in-depth topics in geology and environmental studies. Topics and structure vary from term to term.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis
Course Requirements: PLAN: Environmental Geology (BS, BPH) or Environmental Studies (BA, BPH) or Geology (BS, BPH) or Environmental Science (BS)
GEOL 1907 - EXPERIENCE IN UNDERGRADUATE TEACHING

Minimum Credits: 1  
Maximum Credits: 1  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

GEOL 1910 - UNDERGRADUATE THESIS

Minimum Credits: 1  
Maximum Credits: 3  
This course is the culmination of an undergraduate research project. Students will write a formal thesis under the supervision of a faculty mentor and give an oral presentation on their research.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: LG/SNC Elective Basis

GEOL 1960 - FIELD CAMP

Minimum Credits: 4  
Maximum Credits: 8  
A geology summer field camp is four to eight weeks long and includes a substantial component of geologic mapping and report writing. Field camp is the traditional capstone experience for geology and environmental geology majors. You should enroll at any accredited field camp offering at least four semester units of credit and transfer the credits to the University of Pittsburgh.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade

GEOL 2054 - SOILS: GEOBIOCHEMICAL LANDSCAPES

Minimum Credits: 4  
Maximum Credits: 4  
An overview of soils with a strong emphasis on landscape scale process. The course consists of lecture and laboratory/field work. The lecture will include description of physical and chemical soil properties and processes, discussion of major soil classifications and description of ramifications at the landscape scale.  
Academic Career: GRAD  
Course Component: Lecture  
Grade Component: Grad LGSNC

GEOL 2446 - ADVANCED GEOGRAPHICAL INFORMATION SYSTEM

Minimum Credits: 3  
Maximum Credits: 3  
Using advanced geographical information systems technologies and geospatial analysis techniques students will extend their knowledge of geographical information systems to include raster, geostatistical, network, model, and 3d/4d based analysis completing complex analysis of real world data sets.  
Academic Career: Graduate  
Course Component: Lecture  
Grade Component: Grad LG/SNC  
Course Requirements: PREQ: GEOL 2449

GEOL 2449 - GIS, GPS, AND COMPUTER METHODS
Minimum Credits: 3
Maximum Credits: 3
The goals of this course are to gain expertise in spatial analysis and geographical information systems
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC

GEOL 2460 - APPLIED REMOTE SENSING AND GPS TECHNIQUES

Minimum Credits: 3
Maximum Credits: 3
Designed as a follow on to the introduction to remote sensing course this advanced class emphasizes field-oriented problems, data collection, and validation. The ultimate goal is to explore the connection between remotely-gathered imagery and the real-world factors which influence those data. Students taking the course should have had at least 1 semester of high school or college physics.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC

GEOL 2525 - STABLE ISOTOPE GEOCHEMISTRY

Minimum Credits: 3
Maximum Credits: 3
This course will provide students with a thorough introduction to the stable isotope systematics of light elements (hydrogen, carbon, nitrogen, oxygen, and sulfur). The course examines the fundamental concepts of isotope equilibrium and kinetics, physiochemical and biogenic mechanisms of isotope exchange, and the principles of mass spectrometry and stable isotope extraction techniques.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad LG/SNC
Course Requirements: PREQ: GEOL 2520

GEOL 2853 - WATERSHED HYDROLOGY AND BIOGEOCHEMISTRY

Minimum Credits: 3
Maximum Credits: 3
Understanding the science of watersheds is critical to improving water quality. This course will examine surface water hydrology, biogeochemistry, and management of watersheds. In addition, we will focus on how varying land uses influence the dynamics of hydrology and biogeochemistry across these systems. Student will develop an understanding of the biogeochemistry of various major elements in watersheds, including nitrogen, carbon, sulfur, and mercury, and how these elemental fluxes are exchanged through atmospheric-terrestrial-aquatic interactions. Students will be expected to demonstrate critical thinking, communication, and analytical skills through student-led lectures, journal discussions, and projects.
Academic Career: GRAD
Course Component: Lecture
Grade Component: GradLG/SU3

GER 0001 - ELEMENTARY GERMAN 1

Minimum Credits: 5
Maximum Credits: 5
This is an elementary language acquisition course and aims to teach students how to carry out various functions likely to be necessary in dealing with others in the target language. The course aims to develop all four language skills—speaking, listening, reading, and writing, and deals with culture as an integral part of each skill. The language acquisition exercises are supplemented by an integrated and systematic presentation of grammar.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
GER 0002 - ELEMENTARY GERMAN 2

Minimum Credits: 5
Maximum Credits: 5
This course completes the introduction of the basic structures of German begun in German 0001. It emphasizes all four language skills--speaking, listening, reading, and writing and deals with culture as an integral part of each skill. The language acquisition exercises are supplemented by an integrated and systematic presentation of grammar.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0001 or GER 0101, or Equivalent; MIN GRADE: B-; PROG: Arts& Sciences

GER 0003 - INTERMEDIATE GERMAN 1

Minimum Credits: 3
Maximum Credits: 3
Conducted entirely in German, this course provides structured practice in understanding, speaking, reading (unedited texts), and writing. The language-acquisition exercises are supplemented by an integrated and systematic review of grammar, emphasizing those structures that are needed for practical communication in authentic German.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0002 or GER 0102 or Online Test Score equal/greater 381 or Paper Test Score equal/greater 22

GER 0004 - INTERMEDIATE GERMAN 2

Minimum Credits: 3
Maximum Credits: 3
Conducted entirely in German, this course enables students to describe in past, present, and future time, and to initiate and sustain a conversation. They discuss contemporary texts and topics, participate in small group activities, and strengthen their writing skills through journal writing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0003 or Online Test Score equal/greater 481 or Paper Test Score equal/greater 41

GER 0011 - CONVERSATION 1

Minimum Credits: 3
Maximum Credits: 3
This course is intended to assist novice level students to strengthen their communicative proficiency. Students learn to handle their needs adequately for travel in Germany or a German-speaking country. In order to encourage oral communication, there is extensive use of audio-visual teaching aids.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 0012 - CONVERSATION 2

Minimum Credits: 3
Maximum Credits: 3
Like its companion course, German 0011, this course emphasizes oral proficiency. The course enables students to converse in formal and informal situations, resolve problems, deal with unfamiliar topics, provide explanations, describe in detail, offer supported opinions, and hypothesize. Areas of context are practical, social, professional, and abstract topics, particular interests, and special fields of competence.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 0021 - GERMAN READING 1

Minimum Credits: 4
Maximum Credits: 4
The objective of this course is to develop a basic reading knowledge of German. It is a beginning course which introduces all the structures of German grammar. German 0021 is designed for students who wish to acquire basic reading skills in the shortest possible time.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 0022 - GERMAN READING 2

Minimum Credits: 4
Maximum Credits: 4
This course is designed to help students obtain an intermediate reading knowledge of German. Students read unedited texts from general fields and from their own areas of specialization. The course includes a systematic review of grammar.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 0031 - ELEMENTARY GERMAN 1 FOR MBAS

Minimum Credits: 2
Maximum Credits: 2
It is an elementary language acquisition course and aims to teach students how to carry out basic functions likely to be necessary in dealing with others in the target language. The course aims to develop very basic abilities in all four language skills--speaking, listening, reading, and writing and deals with culture as an integral part of each skill.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

GER 0033 - INTRODUCTION TO YIDDISH LANGUAGE AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

GER 0058 - MUNICH: HISTORY, CULTURE, SOCIETY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 0101 - BEGINNING GERMAN 1
Minimum Credits: 3
Maximum Credits: 3
This is an elementary language acquisition course and aims to teach students how to carry out various functions likely to be necessary in dealing with others in the target language. The course aims to develop all four language skills—speaking, listening, reading, and writing, and deals with culture as an integral part of each skill. The language acquisition exercises are supplemented by an integrated and systematic presentation of grammar. German 0101 is a pilot course to test a model of introductory German with three contact hours per week. The goal is for students to achieve the same proficiency level as those that take a course that meets five times a week. To that end, the pilot course will entail more extensive use of electronic resources and independent study.

Academic Career: Undergraduate

Course Component: Lecture

Grade Component: LG/SNC Elective Basis

GER 0102 - BEGINNING GERMAN 2

Minimum Credits: 3
Maximum Credits: 3
This is an elementary language acquisition course and aims to teach students how to carry out various functions likely to be necessary in dealing with others in the target language. The course aims to develop all four language skills—speaking, listening, reading, and writing, and deals with culture as an integral part of each skill. The language acquisition exercises are supplemented by an integrated and systematic presentation of grammar. German 0102 is a pilot course to test a model of introductory German with three contact hours per week. The goal is for students to achieve the same proficiency level as those that take a course that meets five times a week. To that end, the pilot course will entail more extensive use of electronic resources and independent study.

Academic Career: Undergraduate

Course Component: Lecture

Grade Component: LG/SNC Elective Basis

Course Requirements: PREQ: GER 0001 or GER 0101 or Equivalent; MIN GRADE: B-; PROG: Arts & Sciences

GER 0203 - INTENSIVE INTERMEDIATE GERMAN 1

Minimum Credits: 5
Maximum Credits: 5
Academic Career: Undergraduate

Course Component: Lecture

Grade Component: LG/SNC Elective Basis

Course Requirements: PREQ: GER 0002 or GER 0102 or Online Test Score equal/greater 381 or Paper Test Score equal/greater 22

GER 1000 - READING LITERARY TEXTS

Minimum Credits: 3
Maximum Credits: 3
Students are lead through a selection of recent stories and three short novels. Extensive and intensive reading skills are practiced. Assignments focus on both global comprehension and fine details. Relationship between meaning and grammatical structure is emphasized throughout.

Academic Career: Undergraduate

Course Component: Lecture

Grade Component: LG/SNC Elective Basis

Course Requirements: PREQ: GER 0004 (MIN GRADE: B-) or Online Test Score equal/greater 550 or Paper Test Score equal/greater 55

GER 1001 - GERMAN WRITING

Minimum Credits: 3
Maximum Credits: 3
This course is designed to strengthen the student's composition skills through constant practice in writing, revising, and editing. The goal is to be able to express thoughts effectively in correct and well-structured German prose, including business correspondence. Strong emphasis is put on problems of stylistics, including punctuation, sentence structure, word usage, and figures of speech.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0004 (MIN GRADE: B-) or Online Test Score equal/greater 550 or Paper Test Score equal/greater 55

GER 1003 - PROFESSIONAL GERMAN 1

Minimum Credits: 3
Maximum Credits: 3
This is an advanced language acquisition course and aims to familiarize students with specialized vocabulary and practices of German-speaking countries in professional environments of such areas as communications, advertisement, international trade, engineering, and law. The course will focus on oral and aural proficiency, appropriate written discourse and reading. The course integrates economic geography the legal and political system of German-speaking countries.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0004 (MIN GRADE: B-) or Online Test Score equal/greater 550 or Paper Test Score equal/greater 55

GER 1004 - PROFESSIONAL GERMAN 2: THE GERMAN BUSINESS (ECO) SYSTEM

Minimum Credits: 3
Maximum Credits: 3
Subject-oriented, authentic texts and videos serve as the vehicle for an efficient and accelerated introduction to business German. The course emphasizes both receptive (reading and listening) and productive (speaking and writing) skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0004 (MIN GRADE: B-) or Online Test Score equal/greater 550 or Paper Test Score equal/greater 55

GER 1005 - GERMAN MEDIA

Minimum Credits: 3
Maximum Credits: 3
In this course, students will strengthen their knowledge of existing grammatical structures and will examine the specific aspects of daily life in Germany via contemporary electronic and print genres. The latter will include online articles and hard copy news sources and a range of daily and weekly news sources. Class discussions, debates, oral reports, and short written assignments will also be based on topics derived from current podcasts, social networking sites, television advertisements and online series, and from new documentary and feature films.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0004 (MIN GRADE: B-) or Online Test Score Equal/Greater 550 or Paper Test Score Equal/Greater 55

GER 1051 - INTRODUCTION TO LITERARY ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Competing methods of literary investigation are analyzed in terms of (1) their underlying assumptions about the nature of art and the relationship between literature and reality and (2) their usefulness as tools for practical criticism. Each approach is examined as a coherent model and then evaluated with reference to actual critical practice.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0004 (MIN GRADE: B-) or Online Test Score equal/greater 550 or Paper Test Score equal/greater 55
GER 1052 - THE MAJOR CULTURAL PERIODS

Minimum Credits: 3  
Maximum Credits: 3  
In this course, we study outstanding cultural developments in the German-speaking countries from antiquity to the 20th century. By acquiring a solid foundation of historical knowledge, students significantly expand their vocabulary (German as a "Kultursprache"), acquaint themselves with many important figures, and develop a basic understanding of the political and cultural geography of central Europe, the turning points of intellectual history, and the shaping of the German cultural tradition.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: GER 0004 (MIN GRADE: B-) or Online Test Score equal/greater 550 or Paper Test Score equal/greater 55

GER 1053 - MAJOR CULTURAL PERIODS 2

Minimum Credits: 3  
Maximum Credits: 3  
This course, a continuation of GER 1052, is the second in a two-course sequence required for German majors and intended to give them a broad overview of the major periods/topics of the culture, history, and literature in the German-speaking countries, from the middle ages to the 20th century. Students will read and analyze a variety of texts (including examples of poetry, drama, and narrative prose), and they will also examine other authentic texts, including work of art, music, architecture, politics and psychology.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PREQ: GER 1000 or 1001 or 1051 or 1052

GER 1101 - ADVANCED GERMAN 1-MEDIA

Minimum Credits: 3  
Maximum Credits: 3  
Intended to be a challenging upper-level language course, advanced German 1 strengthens students' linguistic skills primarily in speaking and listening, but also in reading and writing. We examine specific aspects of daily life (for example, work, housing, leisure, education, youth, and family) via contemporary print, audio, and video media.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any 1000-level German class

GER 1102 - ADVANCED GERMAN 2: STRUCTURES

Minimum Credits: 3  
Maximum Credits: 3  
Students who wish to use German as an effective professional tool or enroll at a German university benefit most from this course. They investigate and practice the structure and style of written German, participate in discussions on a variety of public and academic issues, listen to German lectures and broadcasts, and present German papers on topics of their choice.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any 1000 Level German Course

GER 1103 - ADVANCED GERMAN 2: CREDIT LABORATORY

Minimum Credits: 1  
Maximum Credits: 1
This course supplements advanced German 2 by providing authentic language exercises and practical information about everyday life in Germany. It is designed specifically for students preparing to matriculate into a German University, but will also prove useful to those with other travel goals.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**GER 1104 - GERMAN FOR SOCIAL SCIENTISTS 1**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course has a three-part teaching objective: a) it analyzes how the historical experience of the Weimar Republic and World War II shaped the politico-economic system and national identity in West Germany; b) it reviews major grammatical structures (of German passive voice, subjunctive I and II) necessary to comprehend scholarly materials in the social sciences; and c) it allows students to practice their German language skills in all four areas: reading, writing, listening and speaking.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: Any 1000-Level German Course

**GER 1105 - LITERARY ANALYSIS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
General content, purposes, and methods of this course: students will learn the characteristic features of poetry, prose, and drama and will develop a technical vocabulary to interpret literary works in German. We will also learn about some of the different methodologies and theoretical approaches that literary critics employ to analyze texts. We will build upon and expand the reading techniques and strategies learned in 1000-level courses to prepare students for the more advanced literature and culture seminars at the 1200-level. Readings, class discussions, tests, oral reports and written assignments, including a journal, will be in German.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: Any 1000 level German Course

**GER 1106 - GERMAN CULTURAL HISTORY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course introduces students to major developments and figures in European cultural history from the German tribes to the enlightenment (ca. 750 AD to 1785). It weaves together texts and artifacts from the time period covered and current print as well as audio-visual materials in order to analyze how past cultural history informs German and European collective identity today. This course will be conducted entirely in German.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: Any 1000 Level German Class

**GER 1108 - GREEN GERMANY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
A course for advanced intermediate students of German (B1+ level according to CEFR, the Common European Framework of Reference) who want to gain a more thorough insight into German culture, and at the same time work towards a higher proficiency level in their language skills.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture
GER 1204 - GERMAN FOR SOCIAL SCIENTISTS 2

Minimum Credits: 3
Maximum Credits: 3
This course has a three-part teaching objective: 1) it analyzes historical development and institutional structures of the European union and asks the question to which extent this supranational union was able to engender a collective identity; 2) it allows students to practice their German language skills in all four areas: reading, writing, listening and speaking; 3) it teaches students how to write an analytic seminar paper in German.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: any 1000-level course; PROG: Arts & Sciences

GER 1220 - LITERATURE AND CULTURE 1750-1830

Minimum Credits: 3
Maximum Credits: 3
This course reviews one of the most famous and exciting periods of German literature: a period of great social and intellectual upheavals, of sentimental novels and revolutionary plays, of classical poems and folk tales, when an admired poet became an influential politician, and rebellious women wrote even though they were not supposed to. Students will read some of the classics of German literature, and learn about the historical context of these works. All primary readings and class discussions are in German.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any 1100 level German course

GER 1240 - 20TH CENTURY LITERATURE AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
Major literary and cultural documents of the Twentieth Century are analyzed both formally and thematically in order to understand them in their social and historical contexts. Primary readings are in German.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 1000 or 1001

GER 1242 - PEACE/MILITARISM IN GERMAN CULTURE

Minimum Credits: 3
Maximum Credits: 3
Using literary and non-literary documents, this course examines the perception of peace and war in German culture since the 19th century. The historical approach provides the framework for understanding such diverse issues as the specific structure of the (West-)German armed forces, the strong peace movements and the debate on Germany's role in today's international security system.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Two 1000-level German Courses

GER 1252 - CURRENT LITERATURE AND CULTURE
Minimum Credits: 3
Maximum Credits: 3
In this course, students concentrate on the most recent trends in German literature and culture. Readings from a variety of genres and authors are discussed in the larger context of cultural trends and traditions which have a bearing on current literary and other issues. All readings are in German.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 1001 or 1001

GER 1324 - SPECIAL TOPICS IN GERMAN PROSE

Minimum Credits: 3
Maximum Credits: 3
An in-depth investigation of a literary or cultural problem related to prose fiction. As the topic changes, this course may be repeated for credit.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 1350 - GERMAN DRAMA

Minimum Credits: 3
Maximum Credits: 3
An overview, crossing several literary-historical periods, of the development of German drama.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GER 0004 or Equivalent or online test score => 550 or paper test score => 55; MIN GRADE: C-

GER 1390 - MINORITIES IN POST-WAR GERMANY

Minimum Credits: 3
Maximum Credits: 3
This course analyzes the complex nature of the relationship between the native and foreign population in Germany today. Topics include the history of immigration to Germany, the legal inscription of otherness, and the constitution of identity by the immigrant minority. Using literary and non literary documents as well as different media, students will be introduced to the manifold forces which shape collective images and cultural identities in Germany.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Two 1000-level German Courses

GER 1399 - SENIOR CAPSTONE SEMINAR

Minimum Credits: 3
Maximum Credits: 3
This course is for senior German majors. It will require students to write a senior thesis on a German topic, drawn from their own interests but also related to the focus of the seminar. The specific focus of the seminar will change each year, depending on the instructor, but will be constructed to highlight the intersections between multiple epochs, genres, themes, and/or disciplines. Every version of the seminar will require a senior thesis or project that allows the student to pursue his/her own interests within the topic of the seminar. Seminar readings will be in German.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: Any 1000 Level German Course and Any 1100 Level German Course; LVL: Senior
GER 1409 - EUROPEAN INTELLECTUAL HIST 2 1870-1940

Minimum Credits: 3
Maximum Credits: 3
A course of readings and discussions focused on major texts in the European intellectual tradition from the age of positivism to the second World War. There will be occasional lectures, especially on the social and institutional contexts, but the predominant emphasis will be on class discussions of primary readings. Students who wish to take the course for the German major will be asked to write their papers, and do a substantial portion of the reading, in German.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: Any Two 1000-level German Courses

GER 1410 - KAFKA AND THE MODERN WORLD

Minimum Credits: 1
Maximum Credits: 1
Kafka's major works are examined both formally and thematically with reference to the modernist tradition. Recurring issues include authority, alienation, mass society, guilt and punishment, truth, and writing. Regular assignments from the secondary literature introduce students to central questions of literary criticism and theory. Essays by Kierkegaard, Marx, Nietzsche, and Freud further elaborate the cultural context in which Kafka's texts were produced. All readings are in German.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Satisfactory/No Credit
Course Requirements: CREQ: GER 1510 or ENGLIT 1510

GER 1500 - GERMANIC MYTHS, LEGENDS AND SAGAS

Minimum Credits: 3
Maximum Credits: 3
This course presents a survey of Northern European cultural values from about 500 B.C. To about 1500 A.D. Sources include archaeological finds, sagas, ballads, legends, customs, superstitions, place names, and language expressions. Topics include social organization, distribution of labor and wealth, the position of women and children in family and society, and the uses of supernatural beliefs to achieve worldly goals. Where appropriate, parallels will be drawn between modern Northern European values and their formative myths from the distant past.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 1502 - INDO-EUROPEAN FOLKTALES

Minimum Credits: 3
Maximum Credits: 3
German 1502 is a study of the esthetic, psychological, and social values reflected in a variety of European folklore genres, including magic tales, legends, proverbs, superstitions, and jests. The Grimms' pioneering collections constitute the course's nucleus, but it draws numerous supporting examples from other European countries as well.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 1503 - INDO-EUROPEAN FOLKTALESWRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
German 1503 is the writing practicum for German 1502. This practicum concentrates on the problems of grammar, style, organization, and
GER 1504 - EUROPEAN IDENTITY BETWEEN HISTORY AND EUROPEAN UNION CULTURAL POLICY

Minimum Credits: 3
Maximum Credits: 3
This course explores the state of the European union today with respect to the issue of collective identity formation by integrating the historical development of the EU with studying its evolving institutional structure. The course examines how culture which was originally only an afterthought of European integration has gained in importance since the overarching permissive consensus with which European populations passively supported the integration process began to crumble with the Maastricht treaty of 1992. Through a variety of sources from across the social sciences, political theory and social philosophy, the course elucidates how EU cultural policy aims to engender a transnational European identity.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

GER 1510 - KAFKA AND THE MODERN WORLD

Minimum Credits: 3
Maximum Credits: 3
Human bugs, tortured bodies, persecuted sons, this course examines the literature and legacy of one of the world's greatest authors. Explore questions of power, truth, and self. Learn about German Jewish culture in Prague at the turn of the century. All readings and discussions in English.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

GER 1512 - GERMAN LITERATURE AND EUROPEAN PHILOSOPHY: GOETHE'S FAUST

Minimum Credits: 3
Maximum Credits: 3
This course analyzes Goethe's Faust in its entirety with reference to its epistemological, ethical, and aesthetic investments. Students explore how this masterpiece of German literature staged and re-articulated important conceptual issues within the European philosophical tradition with supplementary readings from Plato, Aristotle, Spinoza, Leibniz, and Kant, as well as Whitehead and Deleuze. The goal of the readings is to construct a conceptual apparatus that can serve as framework of interpretive analysis as well as a reconfiguration of the perennial questions of philosophy and literature regarding their own essence.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 1522 - GERMANY TODAY

Minimum Credits: 3
Maximum Credits: 3
In this course the current cultural, political, and social situation in the German speaking countries is assessed. What are the concerns of Germans, Austrians, the Swiss? By concentrating on current conditions and changes of public consciousness, issues important to German speakers are debated. Materials include articles from journals and newspapers, documentaries, slides, and contemporary works of literature. All materials are in English.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 1526 - DRAMA OF IDEAS
Minimum Credits: 3
Maximum Credits: 3
Although it has been argued that "a poem should not mean, but be", many writers have unashamedly given their art a didactic function. This course identifies the types of causes that literary artists traditionally have championed, and then focuses on the literary techniques that they used to achieve their end. The course is thus a study of "the art of moral persuasion". The principal works investigated are "dramas of ideas" by such playwrights as Ibsen, Shaw, and Brecht, although supplemental prose writings are also included. 
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 1528 - VIENNA

Minimum Credits: 3
Maximum Credits: 3
Viennese culture in the age of modernism anticipates crucial issues, concerns, and debates of our time. The present lecture series introduces students to the multifaceted Viennese developments in art, literature, music, philosophy, and science from the late nineteenth century to World War II. Among the major figures discussed in this course are: Mach, Wittgenstein, Freud, Schnitzler, Kraus, Klimt, Schiele, Loos, Schonberg, Alban Berg. Readings are in English. 
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 1529 - BERLIN: A DIVIDED CITY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

GER 1531 - ELEMENTARY GERMAN 1 FOR MASTER OF BUSINESS ADMINISTRATION STUDENTS

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

GER 1535 - OUTSIDERS IN GERMAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course surveys major works of German literature of the 18th, 19th and 20th centuries and develops literary analytical skills. Students will learn about various aspects of German culture by focusing on "outsiders"-individuals who live on the margins of a social order and, by their very marginality, help define accepted social norms. Readings include texts by Goethe, Kleist, Hoffmann, Buchner, Mann, Kafka, Borchert, Bachmann, Plenzdorf, and Wolf. 
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GER 1540 - NIETZSCHE AND THE NIETZSCHEANS

Minimum Credits: 3
Maximum Credits: 3
Friedrich Nietzsche (1844-1900) continues to be one of the most influential modern philosophers, yet controversy surrounds almost every aspect of his life and work. This course will help students go beyond the controversy in order to consider Nietzsche's texts discerningly and how he approached the problems of truth, power, and morality. Close examination of his most important writings will be complemented by inquiry into Nietzsche's effects on Twentieth-Century philosophy, literature, and culture. The course will also survey major influences of Nietzsche's approaches on subsequent philosophers and scholars.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** LVL: Jr or Sr

**GER 1542 - MARX AND MARXISM**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Having recently passed the 150th anniversary of the publication of capital volume 1, we recognize that our world has changed a great deal since its publication. Yet, in reviewing many of these changes, it is not overstated to say that the works of Karl Marx have provided the transformational impulse. Who was this person, Karl Marx? Why is it that in this post-cold war world his writings continue both to inspire and threaten contemporary readers? How have those inspired by Marx further developed his ideas to constitute the discourse of Marxism? These are some of the questions that this course will raise and try to answer. We will begin with discussions of key works by Marx. Concentrating on the question of culture and cultural analysis, we will then move on to examine some significant contributions to Marxism. The course will end by looking at contemporary attempts at rethinking Marxism.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**GER 1546 - HOLOCAUST LITERATURE AND FILM**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course relies on primary cultural sources of the third Reich, especially film, but also literary, visual, architectural, musical, etc. To examine the parameters of Nazi culture. It will examine such diverse aspects as the leader principle, gender roles, racial hygiene, anti-Semitism, mass culture, propaganda, and visions of history. The cultural artifacts will be analyzed both in terms of their aesthetics as well as the social and historical context of their production.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**GER 1548 - NEW GERMAN CINEMA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Devastated after World War II, starting in the 1960s a number of German directors like Herzog, Fassbinder, Wenders, Kluge, Annders-Abrahms managed to bring international attention back to German cinema. They competed against the film industry of Hollywood under difficult conditions of production, and in many instances made the difficult transition out of the art house and into the mainstream movie theater. Yet these names only represent a small portion of those directors active in the new German cinema. This class will examine the aesthetic and technical contributions of new German cinema as well as the historical and social context of its production. The technological, financial, and intellectual destruction caused by the experience of national socialism and World War II required creative responses that have led to a solid and symbolically rich body of work. In examining the themes and experimental forms of various filmmakers, students will gain insight into the issues that occupied the German public sphere from the 1960s onward.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**GER 1550 - COMPUTATIONAL METHODS IN HUMANITIES**
GER 1590 - SPECIAL TOPICS IN TRANSLATION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

GER 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 5
A course designed for students who wish to work independently on individually designed projects.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

GER 1902 - DIRECTED STUDY

Minimum Credits: 0
Maximum Credits: 15
A course for students who wish to work on individually designed projects under the supervision of a faculty member.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

GER 1903 - GERMAN LANGUAGE TRAILER

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Satisfactory/No Credit
Course Requirements: CREQ: GER 1548

GER 1905 - GERMAN INTERNSHIP 1

Minimum Credits: 1
Maximum Credits: 3
This course places the student in a work setting where they can gain practical experience in a supervised training environment.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

GER 1906 - GERMAN INTERNSHIP 2
Minimum Credits: 1
Maximum Credits: 3
This course places the student in a work setting where they can gain additional practical experience in a supervised training environment.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

GER 1990 - SENIOR THESIS

Minimum Credits: 1
Maximum Credits: 5
A course for senior honors German majors.
Academic Career: Undergraduate
Course Component: Thesis Research
Grade Component: Satisfactory/No Credit

GREEK 0011 - BEGINNING ANCIENT GREEK 1

Minimum Credits: 5
Maximum Credits: 5
This course is the first half of a two-term sequence introducing students to the morphology and syntax of classical attic Greek. Its purpose is to move students as quickly as possible to the reading of simple Greek prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GREEK 0021 - BEGINNING ANCIENT GREEK 2

Minimum Credits: 5
Maximum Credits: 5
This course is the second half of a two-term sequence introducing students to the morphology and syntax of classical attic Greek. Its purpose is to move students as quickly as possible to the reading of simple Greek prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GREEK 0011

GREEK 0210 - INTERMEDIATE GREEK: PROSE

Minimum Credits: 3
Maximum Credits: 3
In this course students consolidate their grasp of Greek grammar and develop their skills of comprehension through close reading of selected prose texts, often one or more of the shorter dialogues of Plato.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GREEK 0021 or 1021

GREEK 0220 - INTERMEDIATE GREEK: VERSE

Minimum Credits: 3
Maximum Credits: 3
In this course students are introduced to the morphology and grammar of Homeric Greek and read selected portions of the Iliad or Odyssey.
Academic Career: Undergraduate
GREEK 1011 - BEGINNING ANCIENT GREEK 1

Minimum Credits: 5
Maximum Credits: 5
This course is the first half of a two-term sequence introducing students to the morphology and syntax of classical attic Greek. Its purpose is to move students as quickly as possible to the reading of simple Greek prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GREEK 1021 - BEGINNING ANCIENT GREEK 2

Minimum Credits: 5
Maximum Credits: 5
This course is the second half of a two-term sequence introducing students to the morphology and syntax of classical attic Greek. Its purpose is to move students as quickly as possible to the reading of simple Greek prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GREEK 1300 - GREEK AUTHORS 1

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Greek authors. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GREEK 0210 and 0220

GREEK 1301 - GREEK AUTHORS 1-WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Writing practicum for students taking Greek 1300 as a writing course.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GREEK 0210 and 0220

GREEK 1302 - GREEK AUTHORS 2

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Greek authors. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GREEK 0210 and 0220

**GREEK 1303 - GREEK AUTHORS 2-WRITING PRACTICUM**

Minimum Credits: 1
Maximum Credits: 1
Writing practicum for students taking Greek 1302 as a writing course.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GREEK 0210 and 0220

**GREEK 1400 - ADVANCED READINGS IN GREEK EPIC**

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Greek epic poets. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: GREEK 1300 or 1302

**GREEK 1402 - ADVANCED READINGS IN GREEK TRAGEDY**

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected Greek tragedies. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: GREEK 1300 or 1302

**GREEK 1416 - ADVANCED READINGS IN GREEK HISTORIANS**

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Greek historians. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: GREEK 1300 or 1302

**GREEK 1418 - ADVANCED READINGS IN GREEK ORATORY**

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Greek orators. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Seminar
GREEK 1420 - ADVANCED READINGS IN GREEK PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Greek philosophers. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: GREEK 1300 or 1302

GREEK 1700 - GREEK PROSE COMPOSITION

Minimum Credits: 3
Maximum Credits: 3
This course provides students with a thorough review of Greek grammar and practice in the writing of Greek prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GREEK 1800 - HONORS COURSE/MAJORS

Minimum Credits: 3
Maximum Credits: 3
In this course undergraduate majors in classics who wish to graduate with honors (and are otherwise qualified) write an honors paper, usually in conjunction with a Greek reading course at the 1300 or 1400 level.
Academic Career: Undergraduate
Course Component: Thesis Research
Grade Component: Satisfactory/No Credit

GREEK 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
In this course a student undertakes study in Greek in consultation with a member of the faculty.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

GREEK 1902 - DIRECTED STUDY FOR UNDERGRADS

Minimum Credits: 1
Maximum Credits: 6
In this course a student undertakes directed study in Greek under the close guidance of a member of the faculty.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

GREEK 1903 - DIRECTED RESEARCH FOR UNDERGRADS
In this course a student undertakes directed research in the field of classical civilization under the close guidance of a member of the faculty.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** Letter Grade

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**GREEK 1990 - UNDERGRADUATE TEACHING ASSISTANTSHIP IN GREEK**

**Minimum Credits:** 1  
**Maximum Credits:** 5  
This course allows students to earn credits for serving as undergraduate teaching assistants in courses listed under the 'Greek' subject code. Admission requires permission of the department chair. Students may repeat for credit.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade

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**HEBREW 0101 - ELEMENTARY HEBREW 1**

**Minimum Credits:** 5  
**Maximum Credits:** 5  
This course introduces students to the fundamentals of the Hebrew language. We study basic vocabulary, grammar and sentence structure, and learn to read and write Hebrew. Emphasis is learning to speak the language.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**HEBREW 0102 - ELEMENTARY HEBREW 2**

**Minimum Credits:** 5  
**Maximum Credits:** 5  
Continuation of the introductory work begun in Hebrew 1. Students further develop their reading, writing and speaking skills with the greatest emphasis being placed on oral communication.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**HEBREW 0103 - INTERMEDIATE HEBREW 3**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students continue to develop the skills acquired in Hebrew 2 with emphasis on speaking and on understanding the spoken language. Readings this term include short stories and articles.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**HEBREW 0104 - INTERMEDIATE HEBREW 4**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students continue to develop their Hebrew reading and speaking skills. Sophisticated Hebrew texts are introduced.

**Academic Career:** Undergraduate
HEBREW 0105 - ADVANCED HEBREW 5

Minimum Credits: 3
Maximum Credits: 3
This course is for advanced level students and uses Hebrew language literature, print and electronic media, film, and TV shows. Emphasis is placed on conversation, modern Hebrew literature, and composition.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HEBREW 0106 - BIBLICAL HEBREW

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the grammar, syntax and vocabulary of Biblical Hebrew
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HEBREW 1065 - BIBLICAL HEBREW

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HEBREW 1902 - DIRECTED STUDY - UNDERGRADUATE

Minimum Credits: 1
Maximum Credits: 4
Students may undertake a variety of individual reading or research projects under the close supervision of a faculty member. Regular meetings are required. Permission of the Jewish Studies coordinator and the faculty member required.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

HEBREW 1905 - UNDERGRADUATE TEACHING ASSISTANT

Minimum Credits: 1
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

HPA 0031 - MODERN DANCE 1

Minimum Credits: 1
Maximum Credits: 1
Introduces the college student to modern dance as a point of view, rather than a particular technique. There will be exercises to increase strength, and
flexibility, as well as to teach techniques of movement, exploration and improvisation. Emphasis is on developing a sensitive awareness of one's own body movement in time and space.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade

### HPA 0032 - MODERN DANCE 2

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
This course is designed for those students who have mastered beginning dance technique and wish to gain more advanced skills. Advanced technique and compositional work is stressed. Course objectives include increased technical skills, awareness and appreciation of modern dance as an art form, ease in phrasing rhythmic movement and skill in improvisational movement.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

### HPA 0033 - BALLET 1

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
For absolute beginners introducing them to basic fundamentals of the classic ballet technique.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade

### HPA 0034 - BALLET 2

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade

### HPA 0040 - CHOREOGRAPHY

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
The art of making dances. Studies dealing with timing, grouping, energy, quality, etc., Lead to the creation of dances. Designed for students who wish to explore the creative process or for those wanting more advanced dance training.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade

### HPA 0041 - JAZZ 1

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
Fundamentals of jazz dance for beginning dance students. Class includes warm-up, center floor, and cross floor movement combinations, contemporary jazz and pop music is emphasized.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis
HPA 0042 - JAZZ 2

Minimum Credits: 1
Maximum Credits: 1
A continuation of the basic fundamentals learned in Jazz 1. More emphasis is placed on longer routines and more complicated movement sequences. It is an intermediate jazz class.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

HPA 0044 - DANCE PRODUCTION

Minimum Credits: 2
Maximum Credits: 2
This course is designed to familiarize students with both the technical and production aspects of dance and to increase appreciation of dance in all its forms.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

HPA 0050 - SPORTS AND DRUGS

Minimum Credits: 1
Maximum Credits: 1
This course presents medical and scientific information about the use of drugs in sports. It is especially designed for college athletes, but should also be of interest to students preparing for careers in athletic training, coaching, exercise science, health and physical education, physical therapy, and sports medicine.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

HPA 0060 - INTRODUCTION TO DANCE

Minimum Credits: 3
Maximum Credits: 3
A comprehensive overview of dance as an art form and physical activity, covering the history and philosophy of dance. Dance will be examined as a means of communication and expression, and its relationship to other art forms. A particular emphasis will be placed on Western dance forms and its multicultural roots.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HPA 0196 - FIRST AID AND CPR

Minimum Credits: 2
Maximum Credits: 2
A 2-credit lab/lecture discussion course in which American Red Cross techniques of cardiopulmonary resuscitation (CPR) for the professional rescuer and community first aid and safety are presented. In addition to these skills, current methods of management and treatment of emergency illnesses and injuries are also taught. American Red Cross certification available to all students who meet the standards.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
HPA 0244 - DANCE PRODUCTION 2

Minimum Credits: 2
Maximum Credits: 2
This course is designed to familiarize students with both the technical and production aspects of dance in all its forms. The students will have experiences with lighting, costume, choreography, public relations, and stage management.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HPA 0473 - DANCE PEDAGOGY

Minimum Credits: 2
Maximum Credits: 2
This course is designed for physical education majors and all students with a desire to learn the how and why of teaching dance in an educational program. Through the lectures the students will cover the educational components of dance, i.e., Dance in education, dance for elementary and secondary schools, dance history and dance resources. The movement lab will introduce the students to the fundamentals of movement.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

HPA 0474 - LIFETIME ACTIVITIES 1

Minimum Credits: 1
Maximum Credits: 1
An introductory course for prospective instructors of health and physical activity. Includes experiences in the following: group exercise focused on aerobic, resistance, and flexibility; aquatic exercise, dance, yoga, Pilates, and others. Also covers topics such as history, safety, and methods of training and conditioning.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 0475 - LIFETIME ACTIVITES 2

Minimum Credits: 1
Maximum Credits: 1
An introductory course for prospective instructors of health and physical activity that expands on the content taught in HPA 0474 (lifetime activities 1). Includes experiences in the following: group exercise focused on aerobic, resistance, and flexibility; aquatic exercise, dance, yoga, Pilates, and others. Also covers topics such as history, safety and methods of training and conditioning.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 0477 - INTRODUCTION TO EXERCISE SCIENCE

Minimum Credits: 1
Maximum Credits: 1
This course will introduce students to the field of Exercise Science and its related professions. This course is intended for those students considering Exercise Science and its related professions as an academic major and for career placement. This course will involve exposure to the history and contemporary opportunities within Exercise Science that will involve both lecture and applied experiences.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: H/S/U Basis

HPA 0497 - WATER SAFETY INSTRUCTOR

Minimum Credits: 2
Maximum Credits: 2
The water safety instructor course is designed to earn certification to teach American Red Cross swimming and water safety courses. The course focuses on planning, organizing, sequencing, skill development, and Red Cross operational policies and procedures.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

HPA 1011 - APPLIED HUMAN ANATOMY

Minimum Credits: 3
Maximum Credits: 3
This is a non-laboratory lecture discussion course in which all body systems are investigated. Primary emphasis is placed on the skeletal, articular, muscular, cardiovascular and nervous systems. In addition, the basic mechanical principles underlying human movement and an understanding of human structure are used to analyze movement and physical skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1012 - APPLIED HUMAN ANATOMY LAB

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1021 - HEALTH THEORIES AND PROGRAMMING

Minimum Credits: 3
Maximum Credits: 3
The course introduces students to the major health theories that are used to plan, implement, and evaluate health promotion and disease prevention interventions for schools, workplaces, healthcare organizations and communities. Using the theories students design a health intervention.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1031 - RESEARCH IN SPORTS SCIENCE

Minimum Credits: 3
Maximum Credits: 3
A course designed to provide the student an understanding of the role of measurement and evaluation in the educational process, the ability to select and/or develop and administer appropriate tests, and the ability to use appropriate mathematical and statistical techniques in data analysis. Additionally the student will gain an introduction to the research process as practiced in health, physical education and sport.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1033 - HUMAN PHYSIOLOGY

Minimum Credits: 3
Maximum Credits: 3
Develops knowledge of the functions of the human body. Covers the major systems (e.g., Circulatory, digestive, endocrine, excretory, nervous, reproductive, thermoregulatory). Introduces key concepts for understanding the physiological basis of human performance in sport, dance, and exercise.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1034 - EXERCISE SCIENCE SEMINAR 1

Minimum Credits: 2
Maximum Credits: 2
This one credit course will provide an introductory overview of the academic discipline and profession of exercise science and its related fields. The course will also provide established guidelines and procedures necessary for those students enrolled in the university of Pittsburgh movement science undergraduate program.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1035 - EXERCISE SCIENCE SEMINAR 2

Minimum Credits: 1
Maximum Credits: 1
This one credit course will provide final exposure to the profession of exercise science and its related fields. The course will also provide established guidelines and procedures necessary for professional interviews, resume, and other requirements necessary for job or graduate school application in an exercise or other health related field.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 1033 and 1011 and 1012 and 1042 and 1485 and 1044 and 1486 and 1031 and 0474 and 0475 (MIN GRADE 'C' for all listed courses); CUM GPA 2.50; PLAN: Health and Physical Activity (BS)

HPA 1042 - PHYSIOLOGY OF EXERCISE

Minimum Credits: 3
Maximum Credits: 3
A lecture and laboratory class in which the effects of exercise and sport upon body systems will be investigated. Reviews knowledge concerning physiological mechanisms which relate to improvements of physical performance.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 1033 and 1011 and 1012 (MIN GRADE 'C' for all listed courses); CUM GPA 2.50; PLAN: Health and Physical Activity (BS)

HPA 1043 - MOTOR DEVELOPMENT
Minimum Credits: 3
Maximum Credits: 3
This course acquaints the student with adult/child differences in motor skill development. Topics included are: factors influencing growth and development, physiological changes from infancy through maturity, stages of fundamental differences in skilled learning and performance.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPC 1044 - BIOMECHANICS

Minimum Credits: 3
Maximum Credits: 3
Required course for undergraduate students in athletic training, exercise science, and teacher education. Provides studies to develop knowledge of biomechanical concepts and principles. Includes experiences to develop proficiency in the diagnosis of motor performance errors. Also places emphasis on applications of biomechanics in making curriculum and instruction decisions in physical education programs.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 1011 and 1012 (MIN GRADE 'C' for all courses); CUM GPA 2.50; PLAN: Health and Physical Activity (BS)

HPC 1045 - DIRECTED RESEARCH PRACTICUM

Minimum Credits: 2
Maximum Credits: 2
Students complete a comprehensive review of literature on a movement-related problem and then, under the guidance of a faculty member, design, conduct, and report an original research project.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: HPA 1031 (MIN GRADE 'C'); CUM GPA 2.5

HPC 1141 - FITNESS FOR INSTRUCTORS

Minimum Credits: 2
Maximum Credits: 2
Fitness for instructors will teach the student the major elements of fitness. How to assess fitness levels, determine fitness goals, design fitness programs and facilities. The course will be a combination of classroom, exercise, and practical experiences.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

HPC 1143 - TEACHING MIND/BODY EXERCISE

Minimum Credits: 2
Maximum Credits: 2
This is a course designed to prepare students to become instructors for mind/body classes including pilates and yoga. The course will begin with a brief overview of the history behind various mind/body formats and then move to practical application. Students will learn basic anatomy related to exercise as well as how to properly teach exercises and breathing techniques. Upon completion of the course, students should be capable of instructing pilates and yoga classes, as well as have a comprehensive understanding of the theories and principles behind the disciplines. No prior instructing experience is necessary.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
HPA 1169 - HEALTH FITNESS PRACTICUM 1

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 0474 and 0475 (MIN GRADE 'C'); PLAN: Health and Physical Activity (BS), CUM GPA 2.50

HPA 1170 - HEALTH FITNESS PRACTICUM 2

Minimum Credits: 1
Maximum Credits: 1
This 1-credit course will provide HPA students the opportunity to observe, implement and practice the application of exercise testing, assessment and prescription, training, group instruction, and supervision in the health-fitness field using principles and techniques related to the HPA curriculum in a real health and fitness setting.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 0474 and 0475 (MIN GRADE 'C'); CUM GPA 2.50; PLAN: Health and Physical Activity (BS)

HPA 1171 - RESISTANCE TRAINING INSTRUCTOR

Minimum Credits: 1
Maximum Credits: 1
This course is designed to provide students with the knowledge and practical skills needed to work one-on-one with fitness participants and to lead resistance training groups including: basic machine and free weight training skills; proper resistance training techniques; machine and free weight positioning; kinematics and placement; resistance training modifications and utilization of equipment such as kettle bells, stability balls, medicine balls, resistance bands and other tools. Upon completion of this course, students will be competent to develop high quality resistance training programming. It will provide necessary instructor skills such as leadership, appropriate exercise selection and program design, and effective cueing. Students will experience introductory leadership in a variety of traditional and contemporary modes of resistance training instruction.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 0474 AND HPA 0475 (MIN GRADE 'C')

HPA 1172 - GROUP FITNESS INSTRUCTOR

Minimum Credits: 1
Maximum Credits: 1
This course is designed to provide students with the knowledge and practical skills needed to lead contemporary group exercise classes including Indoor Cycling, Water Aerobics, Aquatic Conditioning, Boot Camp Fitness, etc. Upon completion of this course, students will be competent to lead dynamic, high quality group exercise. It will provide necessary instructor skills such as leadership, appropriate exercise selection and program design, and effective cueing. Students will experience introductory leadership in a variety of traditional and contemporary modes of resistance training instruction.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 0474 AND HPA 0475 (MIN GRADE 'C')

HPA 1173 - AEROBICS INSTRUCTOR

Minimum Credits: 1
Maximum Credits: 1
This course is designed to provide students with the knowledge and practical skills needed to lead aerobic group exercise classes including: General aerobics, hi-lo, step and Kickboxing. Upon completion of this course, students will be competent to lead dynamic, high-quality group exercise classes. It will provide necessary instructor skills such as leadership, appropriate exercise selection and program design, and effective cueing. Students will experience introductory leadership in a variety of traditional and contemporary modes of resistance training instruction.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: HPA 0474 AND HPA 0475 (MIN GRADE 'C')

**HPA 1174 - YOGA AND PILATES INSTRUCTOR**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
This course is designed to provide students with the knowledge and practical skills needed to lead Yoga and Pilates group exercise. Upon completion of this course, students will be competent to lead dynamic, high-quality group exercise classes in Yoga and Pilates. It will provide necessary instructor skills such as leadership, appropriate exercise selection and program design, and effective cueing. Students will experience introductory leadership in a variety of traditional and contemporary modes of resistance training instruction.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: HPA 0474 AND HPA 0475 (MIN GRADE 'C')

**HPA 1211 - ATHLETIC INJURY PREVENTION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is designed to provide the student with an introduction to the athletic training profession. Topics to include medical terminology, mechanisms of injury, and recognition and treatment of common athletic injuries to major body parts.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: HPA 1212

**HPA 1212 - ATHLETIC INJURY PREVENTION LABORATORY**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
An introduction to basic taping techniques and injury evaluation techniques used in the profession of athletic training. Basic supportive strappings and paddings for immediate care and competition are presented as well as basic joint evaluation procedures, massage, and crutch fitting.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: HPA 1211

**HPA 1224 - FITNESS ASSESSMENT AND EXERCISE PRESCRIPTION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Fitness for instructors will teach the student the major elements of fitness. How to assess fitness levels, determine fitness goals, design fitness programs and facilities. The course will be a combination of classroom, exercise, and practical experiences.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: HPA 1033, HPA 1011 AND HPA 1012 (MIN GRADE 'C')
HPA 1226 - ASSESSMENT AND PRESCRIPTION FOR SPECIAL POPULATIONS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 1224, HPA 1033, HPA 1011 and HPA 1012 (MIN GRADE 'C'); PLAN: Health and Physical Activity (BS)

HPA 1233 - PRINCIPLES OF STRENGTH AND CONDITIONING

Minimum Credits: 2
Maximum Credits: 2
Instruction is provided describing the principles for development of pre-season, in-season and off-season strength and conditioning programs. Laboratory experiences will include the theory and techniques of operating strength training equipment.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 0474, HPA 0475, HPA 1033, HPA 1011 and HPA 1012 (MIN GRADE'C'); PLAN: Health and Physical Activity (BS)

HPA 1240 - AEROBICS FOR INSTRUCTORS

Minimum Credits: 2
Maximum Credits: 2
This course will prepare the student to teach various components of aerobic exercise, i.e., Aerobic fitness boxing (Tae Bo), hi-low impact, step aerobics, circuit training, interval bench, water aerobics, and the like. The course will not certify instructors, however, it will prepare the student to obtain certification from national organizations with written and practical exams.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

HPA 1241 - TEACHING EXPERIENCE 1

Minimum Credits: 1
Maximum Credits: 1
One term clinical teaching experience with an instructor in "basic instruction physical education". Responsibilities include: teaching undergraduate students basic skills, physical fitness, and safety.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

HPA 1242 - TEACHING EXPERIENCE 2

Minimum Credits: 1
Maximum Credits: 1
One term clinical teaching experience with an instructor in "basic instruction physical education". Responsibilities include teaching undergraduate students basic skills, physical fitness, and safety.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

HPA 1300 - NUTRITION IN EXERCISE AND SPORT
Minimum Credits: 1
Maximum Credits: 1
This course will provide the student with basic nutritional information as it pertains to sport and exercise performance. Topics of discussion include weight reduction and management, nutritional requirements for athletic performance and maintenance of a healthy lifestyle, proper eating habits, diet fads, disordered eating, and supplementation.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

HPA 1485 - NUTRITION AND HEALTH

Minimum Credits: 3
Maximum Credits: 3
Nutrition and energy intake have been linked to health related outcomes. The focus of this course will be on educating students on the basic principles of proper nutrition, and how nutrition plays a role in the prevention and treatment of chronic diseases.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1486 - BEHAVIOR CHANGE STRATEGIES

Minimum Credits: 3
Maximum Credits: 3
This course will focus on behavioral strategies for modifying health related behaviors. Primary focus will be placed on physical activity, eating behaviors, and weight control. Emphasis will be placed on practical application of behavioral principles in health related environments.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1487 - CHRONIC DISEASE AND OBESITY

Minimum Credits: 3
Maximum Credits: 3
This course will focus on treatment approaches to obesity including behavioral, pharmacological, and surgical procedures. This will involve expanding on existing knowledge of energy balance, physical activity, nutrition, and behavior modification. The application of this knowledge will encompass the development of interventions to address the obesity epidemic and provide practical knowledge in this area.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 1033, HPA 1485, HPA 1031, and HPA 1224 (MIN GRADE 'C')

HPA 1488 - WEIGHT MANAGEMENT AND PHYSICAL ACTIVITY

Minimum Credits: 2
Maximum Credits: 2
This course is designed for students who meet the clinical criteria for being overweight (body mass index > 25 kg/m2) and who desire to lose weight, improve their nutrition, and increase their exercise. This course will combine instruction on behavioral techniques to lose and maintain weight loss along with supervised cardiovascular and resistance exercise. Students will be assessed at the beginning and end of the course to monitor changes in weight, body composition, fitness and other factors.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
HPA 1489 - CONSIDERATIONS FOR HEALTH AND FITNESS PROGRAMMING

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 1224 and HPA 1031 (MIN GRADE ‘C’)

HPA 1491 - TEACHING HEALTH AND WELLNESS IN ELEMENTARY SCHOOLS

Minimum Credits: 3
Maximum Credits: 3
This class will focus on those factors that affect the health and well-being of children and how teachers may, through their work, promote the health of children both in and outside the educational setting. We will learn the importance of both promoting a healthy lifestyle within the young and the importance of advocating for a healthy environment in which all children and adults may flourish. Students will plan learning activities that will enhance the health knowledge, skills, attitudes and experience of young children.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HPA 1995 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
A flexible curriculum oriented to special research topics of interest to faculty or current issues of concern to educators. Focused on areas within either developmental movement and sport studies or exercise physiology.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PLAN: Health and Physical Activity (BS)

HPA 1996 - CLINICAL INTERNSHIP

Minimum Credits: 12
Maximum Credits: 12
Supervised clinical experience for the B.S. Degree student. The student is placed in a clinical setting appropriate to his/her degree interests and career goals and must complete a minimum of 25 hours of clinical work per credit hour. Supervision is provided by both a cooperating clinical supervisor and the university clinical advisor.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Letter Grade
Course Requirements: PREQ: HPA 1485, HPA 1011, HPA 1012, HPA 1031, HPA 1033, HPA 0474, HPA 0475, HPA 1224, HPA 1044, HPA 1042, HPA 1486, (HPA 1169 or 1170), HPA 1233, HPA 1487, HPA 1226, HPA 1489, and HPA 1035 (MIN GRADE ‘C’)

HPA 1998 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 6
The student proposes and carries out an independent study project under the direction and supervision of an appropriate member of the faculty.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: H/S/U Basis
HRS 1000 - INTRODUCTION TO RESEARCH

Minimum Credits: 3  
Maximum Credits: 3  
The study of the nature of research and the applications of the scientific approach in the research procedures. The course focuses on concepts, design techniques and interpretations, as well as limiting factors and ethical considerations.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: Sch Hlth & Rehabilitation Scs; PLAN: Clinical Dietetics -Nutrition (BS, BOH, BS-H) or (NDNUTR-ND)

HRS 1006 - INTRO TO HUMAN NUTRITION

Minimum Credits: 3  
Maximum Credits: 3  
This course will cover an overview of the scientific principles of nutrition and application of these principles to humans throughout the life cycle. Major focuses of the course are the classification and function of the six major nutrients, review of current nutrition standards, safety of the food supply, and nutrition misinformation.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

HRS 1008 - APPLC OF STATCL CONCEPTS IN HIM

Minimum Credits: 3  
Maximum Credits: 3  
Designed to present student with the understanding of the research process. Student learns to analyze scientific reports to communicate with statisticians when research problems arise.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: School of Health and Rehabilitation Sciences students only.

HRS 1009 - ORGANIZATIONAL THEORY & BEHAVIOR

Minimum Credits: 3  
Maximum Credits: 3  
The primary purpose of this course is to facilitate the student's attaining a more comprehensive, integrated and useful understanding of organizational culture, systems and behavior. The overall emphasis will be on formal organizations in both the public and private sector, however, the theory and concepts will be transferable to any type of organization.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Clinical Dietetics-Nutrition (BS)

HRS 1017 - INTRODUCTION TO EPIDEMIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course will introduce basic concepts of epidemiology for professionals in health and rehabilitation. Descriptive epidemiology, morbidity and mortality studies, and experimental epidemiology will be some of the topics explained and addressed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade
HRS 1018 - SURVEY OF HEALTH AND REHABILITATION PROFESSIONALS

Minimum Credits: 2  
Maximum Credits: 2  
An interdisciplinary faculty team will introduce students to health science professions in physical therapy and athletic training, occupational therapy, speech-language pathology and audiology, rehabilitation counseling, health information management, rehabilitation technology, emergency medicine, and disability studies. Classes will feature lectures and hands-on activities.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Satisfactory/No Credit

HRS 1020 - ANATOMY AND PHYSIOLOGY

Minimum Credits: 4  
Maximum Credits: 4  
Introduces the structure of human cells, tissues, organs and organ systems, and functions associated with them. Range of topics extends from gross anatomical features to considerations of chemical processes that serve as the basis for cellular controls, gene expression and energy metabolism. Emphasis on relationship of structure to function and on understanding how structural or functional disturbances can become the basis for disease processes.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: School of Health and Rehabilitation Sciences students only.

HRS 1023 - HUMAN PHYSIOLOGY

Minimum Credits: 4  
Maximum Credits: 4  
This course has been designed in an effort to provide pre-clinical students with a foundational scientific knowledge base and conceptual understanding of physiological processes. Each organ system, and its contribution to the maintenance of homeostasis, will be discussed. Further, the essential components of each system will be explored, to the extent that life is supported. Some disease states will be discussed, in order to exhibit certain processes.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Clinical Dietetics-Nutrition(BS or BSH or BPH)

HRS 1025 - INTRODUCTION TO MICROBIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
An overview of medical microbiology introduces the student to medically important bacteria, fungi, viruses, parasites and to immunity.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

HRS 1027 - PATHOPHYSIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to provide a general overview of the predisposing factors and direct causes of disease, as well as their effects on the human body. It will also include a systemic approach to the basic disease processes, in terms of etiology, symptomatology, general pathological changes, diagnostic procedures, and types of treatment.  
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Health and Rehabilitation Sciences students only.

HRS 1052 - TOPICS IN CLINICAL PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: Sch Hlth & Rehabilitation Scs

HRS 1095 - COMMUNITY CONNECTOR COURSE

Minimum Credits: 2
Maximum Credits: 2
This course is especially well-suited for students from SHRS, PHARM, NUR and School of Social Work. This seminar focuses on the patient population which is a high risk population who are vulnerable to frequent readmissions to the hospital. Emphasis will be placed on: 1) understanding this patient population, the health system and health behavior challenges associated with this population, and systematic needs associated with reducing their health care needs 2) The course will include presentations by researchers, clinicians, and healthcare industry experts. Students will need to be available for approximately 6, out-of-classroom activities during the semester. This course will expose students to the patient population through visits with clinicians at the hospital, home, and community, including in-home assessments, patient education sessions, and behavior change (motivational interviewing) techniques. Students may me paired with a nurse, speech language pathologist, occupational therapist, or physical therapist during one of these activities. Each out-of-classroom visit often requires a 4-hour block of time.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HRS 1099 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Provides advanced students an opportunity to explore in depth an area of particular interest to them. It is the student's responsibility to find a faculty member willing to undertake such a tutorial.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Elective Basis

HRS 1421 - SECURITY, PRIVACY AND LEGAL ISSUES OF HEALTH INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Students in this course will explore legal, security, and privacy issues related to health information systems. Data availability, integrity and confidentiality of databases and networks, computer security, public key infrastructure, encryption/decryption techniques, and data recovery will be addressed as well as risk assessment, security policies, HIPAA, privacy, applicable health laws, and ethical issues in the management of health information.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Health and Rehabilitation Sciences students only.

HRS 1422 - COMPUTER PROGRAMMING FOR HEALTH INFORMATICS
This course is designed to introduce advanced computer programming technologies. The course will provide students with skills of solving real health informatics problems using computer programs. This course is not designed as first computer programming class. The instructor assumes that students have taken and are familiar with one or a few programming languages (such as BASIC, C/C++, JAVA, C#, PERL, PYTHON, RUBY) prior to taking this class. One or multiple programming languages may be used in this class to solve health informatics problems. This course is hands-on and project-oriented.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Health and Rehabilitation Sciences students only.

HRS 1424 - DATA BASE MANAGEMENT IN HEALTH CARE

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HRS 1425 - GENOMICS AND PERSONALIZED CARE

Minimum Credits: 3
Maximum Credits: 3

This course is designed as an introductory-level course to data analytics and its application in genomics. In this course, students will learn techniques on data collection, data processing, modeling, data visualization, and result interpretation. Specific examples from genomics will be used to demonstrate the details of these techniques. Students will work on individual projects to extensively practice their data analytics skills. A number of web-based data analysis tools will be used in this course; therefore, students are not required to write their own data analysis programs.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Health and Rehabilitation Sciences students only.

HRS 1515 - REHABILITATION PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3

This course explores rehabilitation psychology and the target population of this clinical psychology specialty, individuals with chronic illness and disability. Psychology and health professionals, regardless of their chosen career profession, will encounter persons with chronic illness and disability (CID). This course provides an overview of key concepts in working with individuals with CID, a discussion of different populations presenting with CID, and examination of evidence based approaches to intervention, and a review of diverse contexts in which counseling and psychology professions treat and interact with persons with CID.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HRS 1700 - COLLEGE ACHIEVEMENT AND CAREER PREPARATION SEMINAR

Minimum Credits: 1
Maximum Credits: 1

This course will focus on career development and job-placement theories, legislation, constructs, and research for persons with disabilities. Through this lens, the course will cover the history of and current practices related to self-advocacy, success strategies, and rights and responsibilities of persons with disabilities. The course will cover time management and goal setting, development of an individual educational plan and identification of services and programs that will lead to college success, and career planning including job-search and employer-negotiation strategies and
identification of community, state, and national resources of employment assistance. Using enablement and disablement models, leaders in the
disability community will be invited to discuss their career pathways. The course will specifically focus on occupational and labor market
information related to assistive technology and related health science and engineering. This course may be of interest to students with disabilities;
students pursuing careers related to disability support, policy, or legislation; special education; and vocational/rehabilitation counseling.

**Academic Career:** Undergraduate
**Course Component:** Seminar
**Grade Component:** Letter Grade

**HRS 1701 - INTRODUCTION TO ORTHOTICS AND PROSTHETICS**

Minimum Credits: 2  
Maximum Credits: 2  
This will be a lecture, seminar, and laboratory course introducing some of the applied science and clinical aspects of the orthotics and prosthetics
professions. Topics include: an overview of the profession; introduction to some basic anatomy, kinesiology and biomechanics related to orthotics
and prosthetics; some pathologies, disabilities, injuries treated with orthoses or prostheses; introduction to patient evaluation and measurement; and
introduction to fabrication of custom orthotics and prosthetics, using laboratory equipment. The course will be taught using hypothetical or actual
case studies.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade

**HRS 1704 - FUNDMS REHAB ENGR AND TECHN 1**

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to fundamental principles and practices related to multiple areas of assistive technology. Technology areas include: seating and
wheelchair mobility, augmentative communication, environmental control, computer access, transportation safety, prosthetics, worksite ergonomics,
and man/ machine modeling. In addition, common terminology, disability ethics and models of service delivery related to assistive technology are
discussed.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade

**HRS 1706 - INTRODUCTION TO REHABILITATION ENGINEERING DESIGNS**

Minimum Credits: 4  
Maximum Credits: 4  
Material at introductory graduate level. Fundamentals of biomechanics with specific application to rehabilitation. Basic mechanics (newton's laws,
statics, dynamics) and vector algebra (forces, moments, equilibrium) will form the first part of the course. The middle section focuses on kinematics
and kinetics applied to biomechanics. The final section examines work/energy methods and stress/strain problems. Sets are assigned regularly and
there are lab exercises/demonstrations.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade

**HRS 1709 - DSGN/FABRICATION WITH ENGR MATLS**

Minimum Credits: 1  
Maximum Credits: 1  
Course designed to teach students basic skills of designing and fabricating mechanical mechanisms and components. Solely lab based and will use
"learn by doing" approach. Students gain experience working with engineering materials such as wood, plastics, aluminum, brass and steel.
Fabrication techniques of turning, milling, cutting, drilling, tap ping and welding will be used. Participate in the design and fabrication of various
devices with increasing complexity. Shop safety, tool section, and equipment maintenance will be an important component of the course.

**Academic Career:** Undergraduate
HRS 1710 - INTRO TO REHABILITATION ENGR

Minimum Credits: 3  
Maximum Credits: 3  
Course geared towards junior/senior students who have a working knowledge of engineering concepts and how these concepts relate to rehabilitation engineering. Specific topics to be covered are analysis/design of sensory aids for vision and hearing, theory of electrical nerves stimulation, accessible accommodations design, analysis/design of prosthetics, biomechanics of wheelchair propulsion, ethical considerations of designing technology and solutions appropriate for people with disabilities.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: School of Health and Rehabilitation Sciences students only.

HRS 1718 - PROJECT BASED TECHNOLOGY DESIGN

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

HRS 1730 - INTRODUCTION TO THE PROFESSION AND PRACTICE OF REHABILITATION COUNSELING

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to the profession and practice of rehabilitation counseling  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

HRS 1732 - COMMUNITY REHABILITATION PROGRAMS: AN OVERVIEW OF COMMUNITY BASED PROGRAMS

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

HRS 1746 - SERVICE LEARNING THROUGH SUPERVISED FIELD PLACEMENTS IN REHAB AGENCIES

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Letter Grade  
Course Requirements: PREQ: HRS 1730 or 1732; MIN GRADE: 'C-' for listed Courses
HRS 1905 - INTER-PROFESSIONAL STUDIES IN HEALTH, REHABILITATION AND DISABILITY IN IRELAND

Minimum Credits: 2  
Maximum Credits: 2
This short spring-break study abroad program is designed for a broad range of students with health-related interests. The course will help students develop inter-disciplinary clinical and research insights while addressing health, disability, rehabilitation and related issues. The programs provides students with an early introduction to the scope of practice of related disciplines and to models of inter-professional practice. Dublin, Ireland delivers an international context and learning opportunity that allows students to appreciate the influences of different policies and systems on collaborative clinical practices.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

HIM 1405 - MEDICAL TERMINOLOGY, PHARMACOLOGY AND PATHOPHYSIOLOGY

Minimum Credits: 1  
Maximum Credits: 1
This course is a basic study of the professional language of medicine. It is designed to include word construction, pronunciation, spelling, definition, and use of terms related to all areas of medical science, hospital service, and health related professions. This ONLINE course is designed to give the student a knowledge of words frequently used in the medical field and provides examples through the review of basic anatomy, physiology, surgical procedures, diagnostic procedures, and symptomatology. Coverage of the pathology of each body system is will take place along with an introduction to pharmacology, and the pharmacological treatment of frequently occurring conditions of each body system.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade  
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1406 - DATA MANAGEMENT AND ANALYTICS FOR HIM PROFESSIONALS

Minimum Credits: 2  
Maximum Credits: 2
The major emphasis of this course is to teach students the process of transferring data into information. This is achieved through a study of database theory, analysis and design, and the teaching of skills in database management systems in the health information environment. Other software tools will be presented in this course.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: CREQ: HIM 1407; PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1407 - DATABASE MANAGEMENT AND ANALYTICS FOR HIM PROFESSIONALS LAB

Minimum Credits: 1  
Maximum Credits: 1
Students will work extensively with Microsoft Excel, Access, and SQL to gain practical experience in design and implementation of databases. Students will also learn important business/consulting skills that include presenting data as information, writing, executive summaries, preparing professional reports that highlight data findings.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade  
Course Requirements: CREQ: HIM 1406; PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1415 - INTRO HEALTH INFOR & HLTH CARE
Minimum Credits: 3
Maximum Credits: 3
An introduction to Health Information Management and the historical development of the health care field with emphasis on the organizational structure of health institutions, as well as federal, state, and local agencies and allied health associations. Student will be introduced to Health Information Management operations and key functions, with an overview of the American Health Information Management Association (AHIMA). Emphasis will be placed on the use of technology in health care, Electronic Health Record, and data quality. An in-depth look at privacy, confidentiality and security will occur.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: HIM 1416; PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1416 - INTRO HEALTH INFOR LAB 1

Minimum Credits: 1
Maximum Credits: 1
The laboratory experience provides students with hands-on opportunities to apply the theory and concepts of health information. The content, format, purpose, confidentiality, adherence to regulations/standards and technology applications for health information will be emphasized. Laboratory activities, group discussions, and case studies will supplement basic instructions.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade
Course Requirements: CREQ: HIM 1415; PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1420 - ORGANIZATIONAL THEORY & BEHAVIOR

Minimum Credits: 3
Maximum Credits: 3
The primary purpose of the course is to facilitate the student in attaining a better, i.e., more comprehensive, well integrated and more useful, understanding of the organizations in which she/he will be spending considerable time and energy for her/his career. The emphasis will be on formal organizations both in health care and other sectors of the economy. Models and concepts developed within the closely related disciplines of organization theory and organization behavior will be addressed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BS)

HIM 1435 - CLASSIFICATION SYMS HEALTH CARE

Minimum Credits: 3
Maximum Credits: 3
An introduction to the principles of taxonomy, purposes of classifying diseases and operations. An in-depth study of ICD-10-CM, ICD-10-PCS and CPT-4 will be undertaken along with a summary review of ICD-9-CM. The interaction of Diagnosis Related Groups (DRG's) with classification systems will be emphasized. Data quality, the Uniform Hospital Discharge Data Set as well as coding/sequencing guidelines for both inpatient and outpatient coding will be examined.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: 1436 and 1438 and 1440; PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1436 - CLASSIFICATION SYSTEMS LAB 2

Minimum Credits: 2
Maximum Credits: 2
This course is designed to provide students with practical experience in the design, development, performance and administration of various types of research databases. Primary focus is the organizational and operational functions of a cancer registry. Medical management of patient, physiology of disease process methodology used in evaluation extent of disease and assessing outcome through patient follow-up, use of ICD-O classification system is presented. Impact of data quality and availability in relation to utilization of the registry is stressed.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: 1435 and 1438 and 1440; PLAN: Health Information Management (BPH or BS or BS-H)

**HIM 1438 - CANCER REGISTRY THRY & PRACT LAB**

Minimum Credits: 2  
Maximum Credits: 2  
Designed to provide students with practical experience in the design, development, performance and administration of various types of research databases. Primary focus is the organizational and operational functions of a cancer registry. Medical management of patient, physiology of disease process methodology used in evaluation extent of disease and assessing outcome through patient follow-up, use of ICD-O classification system is presented. Impact of data quality and availability in relation to utilization of the registry is stressed.

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: 1435 and 1436; PLAN: Health Information Management (BPH or BS or BS-H)

**HIM 1440 - HIM CLINICAL EDUCATION 1**

Minimum Credits: 1  
Maximum Credits: 1  
Clinical affiliation at contracted health care sites under the supervision of qualified health information management personnel. Student assignments are structured to provide actual experience in the technical and clinical areas of health information management, such as record retention and retrieval, release of information, coding and abstracting, chart analysis, etc.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Health Information Management (BPH or BS or BS-H); PREQ: 1415 and 1416; CREQ: 1435 and 1436

**HIM 1442 - APPLC OF STATCL CONCEPTS IN HIM**

Minimum Credits: 3  
Maximum Credits: 3  
Designed to provide students with a practical understanding of the use of statistics in health information management (HIM). This course will focus on management and organization of health information data and the appropriateness of using specific statistical techniques with data. Descriptive statistics, inferential statistics, and non-parametric methods will be discussed and utilized with HIM data or concepts. Database development, research articles and projects will be used to learn the meaning of statistics and its use in the field of HIM.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Health Information Management (BPH or BS or BS-H)

**HIM 1445 - HUMAN RELATIONS IN HLTH CARE**

Minimum Credits: 2  
Maximum Credits: 2  
This course discusses principles of effective communication and interpersonal relationships. Course material will include information concerning communication skills, group therapy, diversity, conflict management, etc.

**Academic Career:** Undergraduate
**HIM 1455 - QUALITY MANAGEMENT**

Minimum Credits: 2  
Maximum Credits: 2  
This course focuses on principles and approaches to assessment of quality in health care and how this impacts the role of the health information manager. Theoretical and pragmatic issues related to quality management, utilization review, and risk management is addressed. Responsibilities of the governing board, medical staff and other health care personnel in relation to quality management and improvement is examined. Requirements of accrediting and licensing agencies related to quality management are presented.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

**HIM 1456 - QUALITY MANAGEMENT LAB**

Minimum Credits: 1  
Maximum Credits: 1  
This quality management laboratory focuses on the practical applications of managing the quality of health care, resource use, and risk. Students will design, implement, and present a quality management project at designated clinical facilities. Also, several in-class/online assignments will be required.

Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade  
Course Requirements: CREQ: HIM 1456; PLAN: Health Information Management (BPH or BS or BS-H)

**HIM 1460 - HIM CLINICAL EDUCATION 2**

Minimum Credits: 1  
Maximum Credits: 1  
Practice and introduction to areas of impact for health information: revenue cycle management, quality assessment, case and care management, data analysis and business intelligence and information security areas.

Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade  
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H); PREQ: 1455 and 1456; CREQ: 1465

**HIM 1462 - EPIDEMIOLOGY**

Minimum Credits: 2  
Maximum Credits: 2  
This course is an introductory course in epidemiology and epidemiologic methodology for the HIM student. It includes types and purposes of epidemiology, measures of risk, and sources of data. There will be an emphasis on epidemiological student designs related to HIM and Health Informatics. Students will design an epidemiological research proposal as part of the course requirements.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

**HIM 1465 - REIMBURSEMENT SEMINAR**
An introduction to topics relating to reimbursement in the health care environment. The course will build on topics covered in Classification Systems including the role of coding in reimbursement and minimizing health care fraud. Additional areas include payment methodologies, revenue, and payment cycle management, claims audits, compliance, value-based purchasing and outpatient prospective payment systems. Clinical Documentation Improvement Programs and the increased use of CAC programs will also be explored.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1470 - SUPERVISION HUMAN RESOURCES HC

Minimum Credits: 3
Maximum Credits: 3
This course discusses the principles and methods practiced in human resource management in the health care environment. The role of the supervisor is emphasized, and practical applications in conjunction with theory are presented to the student.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H); PREQ: 1420

HIM 1475 - HIM NON-TRADITIONAL SETTING

Minimum Credits: 3
Maximum Credits: 3
An overview of health information systems in community-based facilities emphasizing information requirements of ambulatory-care centers, behavioral health, substance abuse, rehabilitation, emergency medicine, occupational health, long-term care, sub-acute care, home health care, hospice, dialysis, managed care, correctional facilities, dental care, and veterinary care settings. The role of the health information manager as a consultant in these settings is discussed. HIM consultants/professionals in these areas are invited to lecture as guest speakers from each of these settings. A 20-hour project is a major component and entails having the student conduct the project as a consultant in one of the health care areas listed above.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H); CREQ: 1480

HIM 1480 - HIM CLINICAL EDUCATION 3

Minimum Credits: 2
Maximum Credits: 2
This clinical education experience provides students the opportunity to observe and participate in health information management activities in a variety of non-acute settings such as long-term care, ambulatory care, behavioral health, rehabilitation, home health, outsourcing companies, IT departments, and telemedicine.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H); CREQ: 1475

HIM 1482 - LEGAL ASPECTS OF HEALTH CARE

Minimum Credits: 2
Maximum Credits: 2
This course discusses principles of hospital law and aspects of handling confidential and health records information. Actual cases and statutes are
discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1485 - SYSTEMS ANALYSIS IN HLTH CARE

Minimum Credits: 3
Maximum Credits: 3
The presentation of concepts of systems analysis and their relationship to health record management is a major emphasis of this course. Case problems and individual projects from health-care settings are assigned to develop proficiency.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1486 - FINANCIAL MANAGEMENT FOR HIM

Minimum Credits: 2
Maximum Credits: 2
This course is designed as an intro level course to principles, concepts and issues of financial management in a health care organization. Focus on financial management viewed from the perspective of department/credit manager and supervisor. Institution-wide accounting and budgeting systems are discussed primarily as a framework for understanding how financial reporting, planning and control is linked to organizational effectiveness and how financial management responsibilities of the departmental manager relate to organization-level financial goals.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1490 - ELECTRONIC HEALTH RECORDS

Minimum Credits: 3
Maximum Credits: 3
This course addresses theoretical and pragmatic issues related to EHR technology, such as design and development, standards and clinical terminologies, privacy and security issues, model EHR systems, evaluation of EHR software systems, and outcomes research using the EHR will be addressed. The responsibilities of the health information management professional, as well as the requirements of accrediting and licensing agencies related to EHR, will also be discussed. The responsibilities and involvement of various members of the health care team in the development, use, evaluation, and dissemination of EHR technology will be emphasized.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1495 - HIM CLINICAL EDUCATION 4

Minimum Credits: 4
Maximum Credits: 4
This clinical experience involves a six-week clinical affiliation at contracted health care sites or health-related organizations under the supervision of qualified practitioners or health information management professionals. Student assignments are structured to provide actual experiences in the administrative, managerial, technical and project-oriented areas of health information management, such as electronic health records development and training, project management, systems analysis, human resource management, health information systems, database management, and other similar experiences.

Academic Career: Undergraduate
HIM 1496 - CAPSTONE COURSE IN HIM

Minimum Credits: 3
Maximum Credits: 3
This is the final capstone course where the faculty will assess students' attainment of all the required professional competencies in health information management (HIM). This will be determined by completing the senior project, an independent project in which the student serves as a consultant to a particular health care facility in order to solve a problem. It will also be determined by completing a poster presentation of the senior project, the study preparation, taking both a mock exam developed by the HIM department based upon its curriculum and taking an entry-level nationally validated exam administered by AHIMA.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PLAN: Health Information Management (BPH or BS or BS-H)

HIM 1499 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Provides student an opportunity to explore in depth an area of particular interest to them. It is the student's responsibility to find a faculty member willing to undertake such a tutorial.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Elective Basis

HPRED 1489 - SPECIAL CONSIDERATIONS FOR HEALTH AND FITNESS PROGRAMMING

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HINDI 0101 - HINDI 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HINDI 0102 - HINDI 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
HINDI 0103 - HINDI 3
Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

HINDI 0104 - HINDI 4
Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

HINDI 0111 - INTENSIVE HINDI AND CULTURAL IMMERSION
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HINDI 1901 - INDEPENDENT STUDY
Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

HINDI 1905 - UNDERGRADUATE TEACHING ASSISTANT IN HINDI
Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis
HINDI 1909 - SPECIAL TOPICS IN HINDI

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PORT 0001 - ELEMENTARY PORTUGUESE 1

Minimum Credits: 3
Maximum Credits: 3
Basic elements of Brazilian Portuguese emphasizing a development of speaking, reading and writing skills. Introductory course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PORT 0002 - ELEMENTARY PORTUGUESE 2

Minimum Credits: 3
Maximum Credits: 3
The second half of this introductory course continues to develop skills in the speaking, reading and writing of Portuguese.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0001 or 1001 (MIN GRADE 'C' for Listed Courses)

PORT 0003 - INTERMEDIATE PORTUGUESE 3

Minimum Credits: 3
Maximum Credits: 3
A continuation of the development of conversational as well as writing skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0002 or 1002 or 1010 (MIN GRADE 'C' for Listed Courses)

PORT 0004 - INTERMEDIATE PORTUGUESE 4

Minimum Credits: 3
Maximum Credits: 3
Follows PORT 0003. A consolidation of speaking, reading and writing skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0003 or 1003 (MIN GRADE 'C' for Listed Courses)

PORT 0020 - CONVERSATION

Minimum Credits: 3
Maximum Credits: 3
An intermediate course in Portuguese conversation.
Academic Career: Undergraduate
PORT 0025 - GRAMMAR AND COMPOSITION

Minimum Credits: 3
Maximum Credits: 3
An intermediate course in grammar and composition for those who have completed PORT 0004 or the equivalent.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0004 or 1004 (MIN GRADE 'C' for Listed Courses)

PORT 0101 - ELEMENTARY PORTUGUESE 1

Minimum Credits: 3
Maximum Credits: 3
Basic elements of Brazilian Portuguese emphasizing a development of speaking, reading and writing skills. Introductory course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0101 or 1001 (MIN GRADE 'C' for Listed Courses)

PORT 0102 - ELEMENTARY PORTUGUESE 2

Minimum Credits: 3
Maximum Credits: 3
The second half of this introductory course continues to develop skills in the speaking, reading and writing of Portuguese.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0101 or 1001 (MIN GRADE 'C' for Listed Courses)

PORT 1001 - ELEMENTARY PORTUGUESE 1

Minimum Credits: 5
Maximum Credits: 5
Basic elements of Brazilian Portuguese emphasizing a development of speaking, reading and writing skills. Introductory course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: MIN CUM GPA: 2.0

PORT 1002 - ELEMENTARY PORTUGUESE 2

Minimum Credits: 5
Maximum Credits: 5
The second half of this introductory course continues to develop skills in the speaking, reading and writing of Portuguese.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0001 or 1001; MIN GRADE: 'C' FOR ALL LISTED COURSES
PORT 1003 - INTERMEDIATE PORTUGUESE 3

Minimum Credits: 3
Maximum Credits: 3
A continuation of the development of conversational as well as writing skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0002 or 1002 or 1010; MIN GRADE: 'C' FOR ALL LISTED COURSES

PORT 1004 - INTERMEDIATE PORTUGUESE 4

Minimum Credits: 3
Maximum Credits: 3
Follows PORT 1003. Consolidation of speaking, reading and writing skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PORT 0003 or 1003; MIN GRADE: 'C' FOR ALL LISTED COURSES

PORT 1010 - PORTUGUESE FOR SPANISH SPEAKERS 1

Minimum Credits: 3
Maximum Credits: 3
Portuguese for Spanish speakers is designed as an accelerated introductory course for native speakers of Spanish or English speakers with fluency in Spanish. It will be the equivalent of Portuguese 0001/1001 and Portuguese 0002/1002. This course concentrates on aspects of the Portuguese language that are most difficult for Spanish speakers, such as pronunciation, vocabulary, idioms and grammatical structures particular to Portuguese.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PORT 1031 - ELEMENTARY PORTUGUESE 1 FOR MBAS

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PORT 1032 - ELEMENTARY PORTUGUESE 2 FOR MBAS

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PORT 1052 - LUSO-BRAZILIAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course studies various Portuguese or Brazilian literary topics according to the needs and interests of the students. Taught in Portuguese.
Academic Career: Undergraduate
PORT 1053 - LUSO-BRAZILIAN TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course deals with literary, linguistic or cultural topics, or a combination of these, relating to Portugal, Brazil or other Portuguese speaking areas.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PORT 1054 - MACHADO DE ASSIS

Minimum Credits: 3
Maximum Credits: 3
This course is a survey of the works of Brazilian novelist, poet, playwright, short story writer Machado de Assis
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PORT 1061 - SURVEY OF BRAZILIAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
A general overview of Brazilian literature from the middle ages to the present.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PORT 1902 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 6
This course allows students to work in depth in areas of their choice, with the approval and supervision of a faculty member, who meets regularly with the student. Evaluation is by examination or by the production of a term paper or series of papers.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

HIST 0010 - PROFESSIONAL DEVELOPMENT SEMINAR

Minimum Credits: 1
Maximum Credits: 1
You are at a family function and one of your relatives over hears what your major is asks you "do you know what you call a BA in history?" Then before you can answer or walk away, he/she responds with "waiter!" While this is the accepted wisdom of what happens to a history, is this the reality of life after college? The answer to that is an emphatic "no!" Therefore, in this class you will find out why this is false. Then you will prepare for the real world by practicing and implementing the skills needed to navigate your way through the process of finding a job or going on to graduate school.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Satisfactory/No Credit
Course Requirements: PLAN: History (BA)
HIST 0050 - SOCIAL CHANGE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0089 - MAGIC, MEDICINE AND SCIENCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

Dietary purges, ritualistic spells, mystical transformation, and the balance of self with nature. In each of these approaches is the presence of magic. Magic is a phenomenon common to all societies. In this course, we will study how it has contributed to religion, medicine, the healing arts, and to the emergence of modern scientific thought. Also the extent to which similar systems of belief have given birth to science, religion, magic and therapeutic practice will be explored.

HIST 0100 - WESTERN CIVILIZATION 1

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

The study of others leads back to ourselves. We learn about men and women from the past in order to compare their experience to our own, hoping that the comparison will make us more aware of the opportunities and limitations of present-day life. As an introduction to history, this course tries to suggest the excitement and uncertainties of studying the past. We begin at the time of the crusades, and continue through Renaissance and Reformation to the eve of Industrial Revolution.

HIST 0101 - WESTERN CIVILIZATION 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

A history of the West from the Industrial Revolution to the late Twentieth Century, the period when Europe and its overseas extensions dominated world history.

HIST 0103 - EUROPE IN THE 18TH CENTURY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

It was the best of times, it was the worst of times; it was the age of wisdom, it was the age of foolishness; it was the epoch of belief, it was the epoch of incredulity; it was the season of light, it was the season of darkness. There was a king with a large jaw and a queen with a plain face on the throne of England; there was a king with a large jaw and a queen with a fair face on the throne of France. In both countries it was clearer than crystal to the lords of state, preservers of loaves, and fishes that things in general were settled forever. This course surveys the political, economic, social, and cultural history of Europe in the eighteenth century. Focusing on the major transformations of European society from the Age of Absolutism through the Age of Enlightenment to the Age of Revolution, the course explores local and interconnected histories of Britain, France, Spain, Denmark, Sweden, Russia, Austria, and the Dutch Republic. The course engages five major themes: 'Power, Politics, and Warfare', 'Social, Demographic, and Economic Change', 'Culture, Religion, and the Public Sphere', 'European Expansion Overseas', and 'Revolutionary Europe.' Readings include primary
and secondary sources. The course is open to students of all levels.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 0125 - RELIGIONS OF THE WEST**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is a historical introduction to the religious traditions that developed in ancient Near East and the Mediterranean. Our major emphasis is on the history of the religious traditions that emerged in late antiquity in this area and which continue to be major world religions: Judaism, Christianity, and Islam. We will also touch on Zoroastrianism. We focus on key concepts, historical developments, and contemporary issues. Throughout the course, we also examine interactions among these religious traditions. In the last part of the course we examine the issue of globalization and the spread of these religions around the world as well as the presence of "non-Western" religion in the "West." The course also serves as an introduction to the academic study of religion and provides a foundation for further coursework in Judaism, Christianity, and Islam. No prior knowledge of any of the religions studied is expected or assumed.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 0139 - VIKING AGE SCANDINAVIA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The Viking age, the period from 800 to 1050 AD Marks Scandinavia's transition from prehistoric to historic times. This course will reassess Viking activities as constructive as well as destructive. Raids, commerce and colonization are best illuminated by a blending of written and physical evidence. Through the sagas, secondary readings and an assessment of archaeological sources such topics as state formation, trade, technology, rise of cities, religion and the voyages to Greenland and America will be examined.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 0150 - HISTORY OF MODERN IRELAND**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This class will examine how Britain came to Ireland and why in the context of that period (16th and 17th centuries). It will also examine the very complex relationships between the Catholic church and the British crown in the 17th century, as these relationships played a great role in the Cromwellian era. This will lead us to the heart of the class where we will trace the very complex relationship between modern Irish republicanism and Cromwell.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 0187 - WORLD WAR II-EUROPE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The causes of WW II are surveyed, including World War I, the Russian Revolution, the Great Depression, and the rise of fascist regimes. The determinants of German expansionism will be discussed and related to the outbreak of war in 1939. The military struggle receives attention, but such topics as economic mobilization, propaganda, occupation policies, resistance movements and the Holocaust are also discussed. The course concludes with an analysis of war time diplomacy, the Postwar settlement, and the onset of the Cold War.

**Academic Career:** Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0190 - THE DICTATORS

Minimum Credits: 3
Maximum Credits: 3
This course examines and compares the dictatorships of Hitler's Germany and Stalin's Soviet Union. We shall investigate the official methods and media that transmitted the ideologies and aimed to manufacture consent for national socialism and Stalinist communism. On the basis of myths, public art, films, spectacle, and mass culture of the regimes, we shall discuss such topics as leader cults, construction of utopias, cultural revolutions, identities, and the role of propaganda and entertainment.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

HIST 0200 - EAST CENTRAL EUROPE

Minimum Credits: 3
Maximum Credits: 3
This course is devoted to the exploration of the historical experience of the lands between Germany and Russia from the time the region was first settled by Nomadic tribes to the present. During these one thousand years Eastern Europe was transformed from feudalism to communism and our emphasis will be to understand the ways in which the interaction of social, economic, intellectual, cultural, demographic and political processes contributed to this metamorphosis.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0201 - THE BALTIC SEA: FROM THE VIKINGS TO POST-SOVIET RE-UNION

Minimum Credits: 3
Maximum Credits: 3
In this course we will explore the Baltic Sea region, and trace Northern Europe's history from the age of the Vikings to the post-Soviet re-union in 1991. We will study the history of this region and its diverse language communities: Scandinavians, Finns, Balts, Slavs and Germans. We will discuss how the Baltic Sea region was shaped by several European powers, in particular Denmark, Sweden, Poland-Lithuania, Russia, Prussia, and Germany. The course will cover the history of Northern Europe over the course of the last 1,000 years, including the Vikings, the Hanseatic League, the Reformation, the Thirty Years War, the Nordic Wars, the Enlightenment, Nordic Romanticism, the Russian Revolution, the two World Wars, the Cold War, and the renewal of the Baltic Sea region as a unified trading space after the collapse of the Soviet Union.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0300 - RUSSIA TO 1860

Minimum Credits: 3
Maximum Credits: 3
This course examines the social, political, economic and intellectual developments of Russia from the Great Reforms of Peter to the Emancipation of the Serfs in 1861.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0301 - RUSSIA TO 1917

Minimum Credits: 3
Maximum Credits: 3
This course examines the social, political, economic and intellectual developments of Russia from the Great Reforms of Peter to the Emancipation of the Serfs in 1861.
Minimum Credits: 3
Maximum Credits: 3
This course analyzes the major social and economic problems of the Russian Empire from the emancipation of 1861 through the Revolution of 1917. The emphasis is on understanding the major issues that precipitate the first "socialist" Revolution in European history.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0302 - SOVIET RUSSIA

Minimum Credits: 3
Maximum Credits: 3
This course examines the history of the USSR from 1917 to the present. Particular attention is paid to the revolutionary transformation of society, the construction of the Soviet state and Soviet society, and to the ways in which state and society relate.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0400 - EAST ASIAN CIVILIZATION TO 1800

Minimum Credits: 3
Maximum Credits: 3
This course introduces major themes in the history of East Asia. It analyzes the relationships between East Asian thought systems; political, economic, and social institutions; and foreign influences for the purpose of understanding the forces that shaped the East Asian tradition. The course focuses on how this distinctive tradition produced two very different societies in China and Japan.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0401 - MODERN EAST ASIAN CIVILIZATION

Minimum Credits: 3
Maximum Credits: 3
This survey of Chinese and Japanese history in the nineteenth and twentieth centuries compares and contrasts the development of these two East Asian nations through a format that includes lectures, discussions, films, and readings.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0403 - HISTORY OF MODERN SOUTHEAST ASIA: COLONIAL ERA TO PRESENT

Minimum Credits: 3
Maximum Credits: 3
This is an introductory survey course in the political and cultural history of Modern Southeast Asia from 1815 through 1978 or roughly from the growth of European colonialism within the region through the end of the Khmer Rouge regime in Cambodia. It will emphasize the expansion of European influence in the political and economic spheres, the growth of nationalism, and the process of decolonization in Southeast Asia. It will also focus on the new political and cultural forces that transformed the region over the course of the 19th and 20th centuries.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0430 - JAPAN AND THE WEST, 1600 - PRESENT
This course considers the historical development of two very distinctive societies at opposite ends of the Eurasian continent: Japan and Western Europe. It focuses on the contrasting development of the early modern period—Europe's age of expansion and Japan's age of isolation, the course compares systems of thought, social and political institutions, and the importance of foreign influences in the two societies.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**HIST 0475 - RELIGION AND CULTURE IN EAST ASIA**

Words have consequences. How a society defines "religion" and "culture" have much to say about how they balance individual freedom and collective responsibility. This course focuses on how religion has been and is practiced in East Asia in modern and contemporary times. We begin with an overview of the major religions in the region (e.g., Confucianism, Daoism, Buddhism, Shinto, folk traditions), and examine various themes to help us learn how religion influences the lives of individuals and the wider societies in which they live. Themes dealt with include the relationship between religion and politics and law; nationalism, terrorism, and secularization; gender, sexuality, and the family; healing, the environment, and ethical behavior; and the life cycle and ritual calendar year. By looking at how these issues unfold in modern China and Japan and at their global significance enable us to better understand how religion shapes our world.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**HIST 0487 - WORLD WAR II IN ASIA**

The history of the war, 1937-1945, between Japan on the one hand and China, the United States, the Soviet Union and Great Britain on the other. The course stresses the ideological, economic, political, social, diplomatic and military forces in those five countries, and how these forces led to a disastrous war beginning in the late 1930s. The course concludes with a discussion of the allied occupation of Japan and Japan's postwar recovery.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**HIST 0500 - COLONIAL LATIN AMERICA**

This course explores the material history of Latin America during the period of Spanish and Portuguese Colonial Rule, from 1500 to 1825. In it, we will examine the interplay between material conditions (climate, natural resources, flora and fauna, and geographic features) and material culture (built space, technology, commodities, agriculture, as well as cultural products), asking how they shaped human action. Weekly case studies-ranging from pre-contact indigenous agriculture, through the role of technology in the success of Spanish conquistadors, to the impact horses on the Spanish frontier—prompt students to engage with the lived experience of a broad range of people living in pre-independence Latin America.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**HIST 0501 - MODERN LATIN AMERICA**

History of the Latin American republics from independence, in 1825, to the present.

**Academic Career:** Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0502 - AFRO-LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
A survey of black history in the countries of Latin America, from the period of European conquest (c. 1500) to the present.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0506 - SPANISH PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
This course is offered in conjunction with HIST 0501, Modern Latin America. It is a supplementary, one-credit Spanish-language recitation, where issues raised each week in history 0501 will be discussed in greater detail in a Spanish-immersion format. This practicum offers an opportunity for students to utilize, reinforce, and deepen the skills they have acquired in foreign language courses. We will listen to Latin American music, read primary sources from political manifestos to poetry, and generally enrich our understanding of Latin America's diverse past even as we improve our Spanish-language conversational fluency. This practicum is a great option for students hoping to study abroad in the future.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

HIST 0521 - CARIBBEAN HISTORY

Minimum Credits: 3
Maximum Credits: 3
Examines historical roots of modern Caribbean. Examines major historical developments from period of subjugation of indigenous population through era of slavery to rise of modern nationalism and impact of American intervention. Also analyzes related socioeconomic systems and institutions. Selected country case studies included.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0600 - UNITED STATES TO 1877

Minimum Credits: 3
Maximum Credits: 3
This is an introductory, lower division, course that develops the history of United States from the 1400s through the 1880s.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0601 - UNITED STATES 1865-PRESENT

Minimum Credits: 3
Maximum Credits: 3
An introduction to American history from the Civil War to the present which emphasizes selected topics on changes in American society and politics as an earlier agrarian society became an industrial-urban one and as the nation took up an ever larger role in world affairs.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
HIST 0612 - ORIGINS OF AMERICAN CAPITALISM

Minimum Credits: 3
Maximum Credits: 3
This course surveys the history of North American capitalism from the time of the first European settlements up through the emergence of a recognizably modern economy in the aftermath of the Civil War. It focuses in particular on the ways in which ordinary people made a living, how and why those ways changed over time, and what those changes in turn can tell us about the evolving structural determinants of the system as a whole.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0663 - 20THC AFRICAN AMERICAN WOMEN'S HISTORY

Minimum Credits: 3
Maximum Credits: 3
Using both a chronological and topical format, this course will investigate the history, culture, and activism of African American women in the Twentieth Century through readings of historical texts and articles, autobiography, and oral testimony. The content of the course includes an exploration of the responses of African American women to racism, sexism, and class and color consciousness within different historical periods.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0670 - AFRO-AMERICAN HISTORY 1

Minimum Credits: 3
Maximum Credits: 3
This course surveys the history of Afro-Americans from their African origins to their emancipation during the Civil War.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0671 - AFRO-AMERICAN HISTORY 2

Minimum Credits: 3
Maximum Credits: 3
This course surveys the development of black Americans from the time of the Civil War to the present.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0675 - WITCHES TO WALDEN POND

Minimum Credits: 3
Maximum Credits: 3
A survey of American religious history from the colonial period through the civil war.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 0676 - RELIGION IN MODERN AMERICA
This course examines the impact of religion as a moral, intellectual, and institutional force in America from 1865 to the present. We seek to understand how religions have both shaped and reflected economic, social, and cultural conditions in the United States. The course format combines lecture with student discussion of religious conflicts and critical moments of cultural change. Documentary films, slides, and local sites are also used. Major emphases include religious responses to intellectual, scientific, and economic change, including Biblical criticism, evolutionary theory, immigration, urbanization, industrialization, Marxism, fascism, racism, feminism, and globalization.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HIST 0678 - UNITED STATES AND THE HOLOCAUST

**Minimum Credits:** 3  
**Maximum Credits:** 3  
With increasing interest in the Holocaust in Europe, this course focuses on the American side of the Atlantic - on issues of anti-Semitism and anti-immigrant sentiment in this country and on America's response to the Holocaust. We will also look at some post-Holocaust issues as well.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HIST 0685 - UNITED STATES FOREIGN RELATIONS

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course emphasizes three significant periods of development: (a) the period of origins, 1775-1825, (b) the period of hesitant entry onto the international scene, 1890-1941, and (c) the period of full participation in international affairs, 1941-present. In the process the course endeavors to demonstrate the changing role of such concepts as security, neutrality, isolationism, expansionism, and intervention in the evolution of the nation's conduct of foreign affairs.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HIST 0687 - US IN THE MIDDLE EAST

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course covers the history of political, economic, and cultural interaction between the United States and the Middle East beginning in the interwar period and continuing forward to the modern day. This course would concentrate on the history of American political and economic ambitions in the region from the 1920s and 1930s to the present. Themes to be explored in this course would include (in no specific order) oil and politics, Islam and the west, hard power versus soft power in diplomacy, American culture and politics post-9/11, and Palestine-Israel as it is conceived in the American mind. Course topics would proceed in a chronological order with details of each major political, diplomatic or military intervention in the Middle East in the twentieth century covered at length in course modules. Course topics would include analyses of the ramifications of American interventions in the region as well as a critique of contemporary U.S. foreign policy in the region.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HIST 0700 - WORLD HISTORY

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is an introductory survey of world history, by which is meant an overview of major processes and interactions in the development of human society since the development of agriculture some 10,000 years ago. It is a selective overview, emphasizing large-scale patterns and
connections in political, social, cultural, technological, and environmental history, yet it also provides balance among regions of the world. It encourages students to apply historical techniques to issues of their own interest.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 0705 - AN ENVIRONMENTAL AND CLIMATE HISTORY OF THE WORLD**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is a history, from ancient to modern times, of the interactions between human societies and the natural environment, including other forms of life that inhabit our planet. Throughout history, humans have affected the natural environment. Sometimes we have sustained balance with it, but often we have degraded it, with impacts on both nature and society. This course investigates how environmental changes have affected the history of human societies, and also how human activity has transformed nature.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 0712 - A GLOBAL HISTORY OF TERRORISM**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will acquaint students with the remarkably long, diverse and widespread use of strategies of terror to advance political, economic, religious and social agendas. Our analysis will focus upon terror from below that is terror by non-state actors; will range from ancient Greece to the present; and will touch upon every inhabited continent. Using examples from many societies, we will discover that the human motivations for terrorist acts have changed little, but that their expression has changed a great deal, from the days of the Spartacus slave revolt, to the calculated terror of the Algerian revolution, to the media-centered "madmen strategy" of Al-Qaeda and Isis. Our organization will be roughly chronological, and will be combined with a typology of different kinds of terrorism. This inherently comparative approach will enable us to make this a true world history course, moving with ease from place to place, movement to movement, while still having a solid temporal and analytical framework to keep the material coherent.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 0713 - A GLOBAL HISTORY OF ANARCHISM**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will explore the discourse and history of Anarchism, from its contested origins through the present. It will introduce students to a wide variety of anarchisms in a wide variety of contexts. It will follow the travels and networks of people who were anarchists and who sought to spread anarchist ideas through teaching, activism and, sometimes, violence. It will pay special attention to the world-wide influences and connections of various anarchists and anarchist groups, and it will ask students to think about hierarchies of power, like political and economic systems, not only through the eyes of the anarchists, but also from the perspectives of their opponents.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 0751 - ANCIENT WORLDS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is a lecture course on the earliest cultures of Egypt, Mesopotamia and China. The approach is comparative. The course will focus on the similarities and the differences in the cultural development of these ancient civilizations, and will stress their contributions and legacies to the civilizations of today.
**HIST 0752 - EMPIRES OF THE STEPPE: EURASIA FROM THE MONGOLS TO THE SOVIET UNION**

Minimum Credits: 3  
Maximum Credits: 3  
Over the last several centuries, EurAsia's domination by successive nomadic steppe empires (stretching from Europe to China) was displaced by new imperial challengers from the periphery (notably Russia, China, and Britain). This course examines the nature of that transition by charting the history of EurAsian empires from the Mongols (thirteenth century) to the present day. From Genghis Khan to Tamerlane to Stalin; between Russian spies, Chinese armies, and the Taliban; spanning silk roads, great games, and more. The empires of the steppe were truly vast in scale, integrating territories usually studied in isolation from one another, and so this course provides important context for separate courses on Russian, eastern European, Chinese, and middle eastern history. The chronological scope of this course is similarly epic, spanning over seven centuries, and thus placing in relief recurring themes related to empires in world history. The thematic emphasis is on geopolitical strategies for imperial rule, but the course will also examine culture, religion, and political economy.

**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis

**HIST 0755 - RELIGION IN ASIA**

Minimum Credits: 3  
Maximum Credits: 3  
This course serves as an introduction to the major religious traditions of South and East Asia. During the course of the semester, we encounter Hinduism and Jainism; the native Confucian, Daoist (Taoist), and popular traditions of China; and the Shinto, folk and new religions of Japan. Buddhism, which originated in India but later spread to East Asia, is examined in its relation to the history of both Chinese and Japanese religions. We approach these traditions through lectures and discussion based on Chinese classical and popular literature, secondary scholarship, and films, which inform us about cultural and historical context, beliefs, practices, and personal experience. In the process we expect to learn something about the ways in which non-Western religious traditions see themselves and their world on their own terms, and to see how/if they can complement our own worldviews.

**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis

**HIST 0756 - INTRODUCTION TO ISLAMIC CIVILIZATION**

Minimum Credits: 3  
Maximum Credits: 3  
This course aims to introduce students to Islamic and Middle Eastern History from the time of the Prophet (ca. 600 C.E.) to the Iranian Revolution in 1979. We will proceed chronologically, focusing mainly on political events. However, a special emphasis will be given to the formation of the Islamic tradition, its evolution across different regions and cultures in time, and its interaction with other traditions. In the modern era, we will particularly explore the Islamic societies' political, cultural, and military encounter with the rising power of the West in the Middle East. In addition to the several historical processes and developments such as modernization, nation-building, Islamic fundamentalism and globalization, which have shaped the history of the Middle East in the last two centuries, our class discussions will also touch on the main theoretical perspectives that have stamped the studies of Islam and the Middle East. Here, concepts such as orientalism, defensive development, and modernity will constitute our main focus.

**Academic Career**: Undergraduate  
**Course Component**: Lecture  
**Grade Component**: LG/SNC Elective Basis

**HIST 0788 - WOMEN AND MEN IN ANCIENT MEDITERRANEAN SOCIETY**
This course examines ancient Mediterranean society, particularly that of Greece and Rome, from the perspective of male and female gender roles.

**Course Requirements:**
- **PREREQUISITES:**
- **COREQUISITES:**
- **PLAN:**

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**HIST 0789 - WOMEN AND MEN IN ANCIENT MEDITERRANEAN SOCIETY/Writing Practicum**

Minimum Credits: 1
Maximum Credits: 1

Writing practicum for students taking HIST 0788 as a writing course.

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**HIST 0791 - Health Controversies in History: Ethics, Publics, Interventions**

Minimum Credits: 3
Maximum Credits: 3

Controversies related to human health have dominated the news in recent years, whether the Ebola epidemic in West Africa, Zika virus in Latin America, or measles outbreaks in California, but a sense of context and causation is often lacking in the public discourse. This introductory course explores the historical roots of selected, current controversies in public health and medicine through the examination of specific case studies from a diverse geographical and chronological range. We will identify and explore the broad historical antecedents of current issues and offers points of comparison from times and places distant from our own.

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**HIST 0795 - History of Africa Before 1800**

Minimum Credits: 3
Maximum Credits: 3

Surveys history of Africa from earliest times to eve of European civilization. Looks at Africa from the inside out and aims at promoting an appreciation of Africa's contribution to world civilization and an understanding of the historical processes that have shaped modern Africa. Major themes and topics include ancient kingdoms, Islam the slave trade and the European contact.

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**HIST 1000 - Capstone Seminar**

Minimum Credits: 3
Maximum Credits: 3

This course seeks to acquaint history majors with proper techniques of historical research and writing.

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**HIST 1001 - Introductory Seminar**

Minimum Credits: 3
Maximum Credits: 3
This course introduces its students to the ways historians work. Either by focusing on various interpretations of a common event or series of events, or by looking at historiographical literature in general, the course demonstrates the diversity of historical interpretation.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: History (BA)

HIST 1005 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course entails the exploration of a special topic chosen by the instructor.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

HIST 1007 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course entails the exploration of a special topic chosen by the instructor.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

HIST 1009 - HISTORY THROUGH ARTIFACTS

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce students to various historical aspects of a society (religious, cultural, economic, political, architectural, etc.) By visiting a specific country after having taken a course on the society. The course provides an experiential dimension to historical understanding.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1014 - COMPARATIVE WITCH HUNTS

Minimum Credits: 3
Maximum Credits: 3
This course examines the European witch hunts of the 16th and 17th Centuries, the anti-Trotskyist "witch hunt" within the Soviet communist party in 1934-1939, and the anti-communist "witch hunt" in the U.S. In 1946-58 to determine if all three qualify as witch hunts. The course's purpose is to have students determine if the three cases are comparable, and why they are or are not.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1016 - THE IRISH IN AMERICA

Minimum Credits: 3
Maximum Credits: 3
This course will discuss the causes and consequences of Irish immigration to the United States, from the 17th century to the present. We will discuss the cultural and political effects of Irish immigration, not only upon the United States, but upon Ireland and Ireland's long-time master, Great Britain. We will also examine in detail the experience of Irish immigrants, and compare it to that of other immigrant groups.
Academic Career: Undergraduate
HIST 1017 - GLOBALIZATION AND HISTORY

Minimum Credits: 3
Maximum Credits: 3
Growing global connections affect all of us. This course explores events and social forces in history that operate at global perspective by examining selected events that occurred simultaneously in many parts of the world such as student protests of the late 1960s, economic downturns and social crises of the mid-1970s, and the effects of the end of the Cold War. Students will be 'assigned' different countries and learn how that society interacted with others inter-nationally. The class includes lectures but will have an emphasis on discussion sections and small group projects.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1018 - GLOBAL INEQUALITY: HISTORIES AND DEBATES

Minimum Credits: 3
Maximum Credits: 3
Why are some places so rich and others so poor? Do climate-based, geographic, or other natural factors account for the deep disparities between world regions? Or do these reflect human choices and hierarchies of power, within countries or between them? In this course we debate the causes of global inequality and ask what can be done about it. Are international efforts to shape economic growth in the world's poorest countries triumphing over poverty or making the problem much worse? Is 'international development' a success story, a failure, or a fraud?

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1019 - CITIES IN HISTORICAL PERSPECTIVE

Minimum Credits: 3
Maximum Credits: 3
This course examines five inter-related themes. We begin by exploring how cities have been, are, and continue to be shaped and assembled. We examine urban space and design, and how culture, economics, and technology affect them. We also focus on the evolution of urban center over time, especially from the industrial revolution. Problem created by industrialization gave rise to utopian urban planning, some of the ideas of which have shaped modern cities. We also explore issues relating to racial and class segregation. We end by examining the recent restoration/gentrification of cities.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1020 - CITIES OF CULTURAL CONQUEST

Minimum Credits: 3
Maximum Credits: 3
This course will take place in Istanbul, Turkey, and Cordoba and Granada, Spain. Each of these cities witnessed fundamental remaking of its identity following conquest by forces that adhered to a different religion. The course focuses on the impact of the ensuing transformation and its impact on the built environment.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1026 - STATES AND SEX IN THE AMERICAS
Minimum Credits: 3
Maximum Credits: 3
This course will trace the evolution of official interest in popular reproductive practice in the United States, Latin America, and the Caribbean from 1800 to 2000. How and why have states sought to regulate sex and its consequences? How have regulations treated people differently on the basis of race, class, marital status, and sexual orientation? And what rights and protections have women and men sought to demand from states? When have they been successful? This course analyzes the Americas-wide history through which the personal became political.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1027 - EXODUS AND PASSOVER

Minimum Credits: 3
Maximum Credits: 3
Study of Exodus story and Passover holiday that develops from it including interpretations in Jewish and non-Jewish sources, development of the holiday and the ritual meal (Seder), changes in the rituals over time, and adaptations and uses of the story and holiday by different modern Jewish and non-Jewish movements and groups.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1030 - COMPUTATIONAL METHODS IN HUMANITIES

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the use of computational modeling and programming to conduct text-based research in the humanities. Course goals include 1) learning how to identify research questions in the humanities that are amenable to computational analysis and processing and 2) designing and implementing XML-based computational systems to explore those questions. No prior programming experience or knowledge of foreign languages required.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1031 - A HISTORY OF CURRENT EVENTS

Minimum Credits: 3
Maximum Credits: 3
This course is designed to open students' eyes to the often misunderstood fact that we do not study history for history's sake, but to better understand the present. The course will be offered with varying themes, each time zooming in on one important present-day issue. Students will have the opportunity to explore topics that have been making the national and international headlines by engaging with the oftentimes complex historical developments that led to the current situation. They will leave the course with a better understanding of both the past and the present.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1040 - WORLD WAR I-COMPARATIVE PERSPECTIVES

Minimum Credits: 3
Maximum Credits: 3
The Great War shaped 20th century Europe and the world. So, in section 1 of this class, you will engage with the how and why the war began and the lively debate taking place in Europe today over the origins of the war. In section 2 you will analyze the war itself and the West's 'descent into barbarism.' In section 3 you will analyze the impact of the war on the arts, revolution and women's roles in society. Finally, in section 4, you will analyze how Europeans dealt with memory and mourning after the war as well as how they 'constructed memory' of the war.
Academic Career: Undergraduate
HIST 1044 - TWO CENTURIES OF DEMOCRATIZATION

Minimum Credits: 3
Maximum Credits: 3
Democratization has advanced in modern history in several great multicontinental bursts from the late eighteenth century to the present. This course will explore why certain historical eras are such moments of democratization and how the very conception of democracy has developed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1045 - SOCIALISM VERSUS CAPITALISM

Minimum Credits: 3
Maximum Credits: 3
The course covers the economic changes that produced capitalism; the attempts to understand capitalism which culminated in the theories of Adam Smith; the problems of communist societies and their attempts to return to some form of capitalism.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1046 - NATIONALISM

Minimum Credits: 3
Maximum Credits: 3
Theories of nationalism, ethnicity, and race are examined and are contrasted with theories of modernization and socialism. Particular emphasis is placed on ethnonationalism in developed Western countries, such as Britain, France, Spain, Belgium, and Canada, and on ethnic politics in the U.S. Comparisons are drawn with nationalism in other types of political systems, particularly the USSR, Yugoslavia, and selected Middle East and African countries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1048 - THE HOLOCAUST IN CONTEXT

Minimum Credits: 3
Maximum Credits: 3
A crucial phenomenon of 20th century history, mass violence and genocide grab the imagination of the public and call for explanations. This course will examine roots of mass violence and discuss various explanatory approaches. We will focus on three case studies (Nazi Germany, the late Ottoman Empire, Indonesia), each time covering various forms of mass violence against several different groups (including enforced resettlement, forced labor, and organized starvation). Topics include political, economic, social, and religious contexts; imperialism and nation-building; the role of political systems as well as of popular participation; and the interaction between victim groups, state and society. The course also gives students an understanding of different existing explanatory concepts (genocide, holocaust, ethnic cleansing, and mass violence). Background in history is beneficial but the course is designed to serve the entire student community.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1049 - RETRIBUTION, RECONSTRUCTION, AND RECONCILIATION: POSTWAR EUROPE

Minimum Credits: 3
Maximum Credits: 3
Europe experienced unprecedented levels of destruction and violence during the Second World War. The experience of ethnic cleansing and mass murder, with the Holocaust standing out as the most disturbing case of mass murder in modern times, were so traumatic that many people lost their faith in modern civilization as such. Against this backdrop, would have predicted that Europe would not only recover but also reach an unprecedented level of political stability, prosperity, and civility after the Second World War. This course examines the striking transformation of postwar Europe by exploring the strategies European societies - with significant involvement of the United States - pursued to overcome the traumas of war and rebuild a shattered continent. Course topics include the legal persecution of war crimes, the building of societies and political orders that are based on the respect of human rights and the rule of law, the reconstruction of Europe's bombed cities, and the attempts to overcome nationalism and xenophobia through various forms of European integration.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1050 - INTELLECTUALS AND POLITICS IN 20THC EUROPE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Intelligent humans have been involved with politics whether they have wished or not throughout this turbulent century. In this seminar we will grapple with different social theories about modern intellectuals, their political and ethical responsibility, and their production. We will also consider ways of doing intellectual history and practice doing intellectual history in written assignments. We will also do case studies, examining the role of intellectuals in several settings during periods of political crises and conflict such as revolution, Nazism, communism, the Cold War.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1051 - CATHOLICISM IN THE NEW WORLD**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course will examine the history of the Roman Catholic Church since 1492 in the Americas using various moments of internal crisis or external conflict as focal points for study. Topics will include: missionary and military contact with new world indigenous populations after 1492; the minority situation of Catholics in the new United States; the Irish famine and its consequences; conflicts between Catholic ethnicities; the impact of Catholic support for fascist regimes in the 1930s and 1940s; counter-cultural forms of Catholicism (conscientious objectors, civil rights activists, pacifists); Vatican ii and its impact; liberation theology, Marxism and structural reform in Latin America; shifting theological positions on social and moral issues; the current sexual abuse crisis. While the emphasis will rest upon the social, economic, and political dimensions of Catholic history, the course will also address the aesthetic and cultural legacy of Catholicism including sacred architecture, music, and the arts, in elite and vernacular forms.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1055 - HISTORY OF DANCE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Does dancing have a history? This course investigates the most popular and controversial dances from the 16th-20th centuries, from the Volta to the Waltz to the Tango to the Grind. We will explore how a dance's initial reception and subsequent development reveal assumptions about class, race, gender, youth culture, sexuality, and the body. The course will focus on social dancing in Europe and North America, but we will also discuss parallel developments in theatrical dance and the significant influence of African dance traditions on Western dance. Assignments will include video clips as well as readings.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1056 - HISTORY OF DANCE PRACTICUM**
This course gives a "hands on" introduction to the dances of the past 400 years, from the stately Pavane of Shakespeare's day to 20th-century tango, swing, and hip hop. Instruction manuals enable us to reconstruct the early dances with some degree of accuracy, while film and video have preserved more recent forms. In addition to learning how to do these dances, we will also consider how choreographies and dance floor etiquette reflected and challenged gender expectations, class divisions, and race relations. No prior dance experience is needed, but students are expected to participate fully in all class exercises and activities.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

HIST 1058 - GLOBAL HISTORY OF DANCE

Minimum Credits: 3
Maximum Credits: 3
We find dancing in every world culture and throughout history, but the dances of each place and time are specific, distinctive, and ever changing. Thus, dance is both an excellent and a problematic subject for cultural and historical comparisons. This course investigates the types, uses, and understandings of dance across the globe and examines shifting attitudes and practices from the renaissance to today. Themes addressed will include dance as a spiritual practice, a tool of the state, and an expression of personal identity. Participatory workshops and video viewing assignments will supplement lectures and readings.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1060 - THE GLOBAL HISTORY OF PIRACY

Minimum Credits: 3
Maximum Credits: 3
This is an exploration of the ancient and global history of piracy. Using primary historical documents (written by and about pirates) as well as the accounts of modern historians, we will discuss a range of topics such as the role of piracy in the building of empires, the later struggle of merchants and their allies to eradicate piracy through bloody campaigns of capital punishment, and the meanings of the pirate as represented in popular culture through the ages.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1062 - HUMAN RIGHTS IN WORLD HISTORY

Minimum Credits: 3
Maximum Credits: 3
Human rights in world history, will provide a historical overview of the human rights movement, focusing on the 18th-20th centuries. The course will lay out the parameters of the struggle to define and implement human rights in the Western and non-Western world, and engage with the different resulting viewpoints. The course will explore controversial aspects of the implementation of human rights internationally, including calls for the respect of cultural differences. Finally, the course will examine case studies of the racial/ethnic/caste dimension of the human rights struggle, looking at the US, Brazil, Israel, and India as countries with quite different cultural traditions, political makeups, and demographic compositions. The course will enroll 40 students, and will meet once per week in the evening.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1071 - STATE-BUILDING IN THE POST-COLONIAL ERA

Minimum Credits: 3
Maximum Credits: 3
How did people across the global south imagine their futures after colonialism? How did they seek to construct new and stable social orders? What obstacles existed to realizing their dreams? In this course, students will engage with the challenges of state-building in the post-colonial era in a global, comparative, and transnational context. Looking across the developing world, the class will explore themes including race, state identity, institution formation, industrialization and agricultural reform, nationalism and citizenship, governance and ideology, and violence and memory.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1076 - COMPARATIVE SLAVERY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will compare slave societies and slave systems in the old world (Europe and Africa) with the new world (U.S. And Latin America).  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1080 - EMPIRES AND THE ENVIRONMENT IN WORLD HISTORY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This upper level seminar examines how global commodity trades in natural resources have shaped the world. We will consider how the pursuit of natural wealth has led people to alter the world around them, and what the consequences of those alterations have been for natural and human communities. We will consider places and practices as wide-ranging as silver production in colonial south America, sugar in the 18th Century Caribbean, opium in 19th Century China, and petroleum in the modern-day Middle East. We will examine global themes such as imperialism, colonialism, capitalism, and the spread of epidemic diseases.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1083 - HISTORY OF SPORTS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course will survey the history of sports, focusing primarily on the 20th century. We will balance consideration of professional sports with that of the games the people play. We will look both at the impact of television as well as the new fitness (revolution). Topics considered will include women in sports, the commercialization of culture and collegiate sports. A major focus will be the role in sports in Pittsburgh in the past 50 years.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1084 - FOOD AND HISTORY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The subject of food production, preparation, and consumption is examined from a variety of disciplinary perspectives in this reading seminar. The course contrasts pre-industrial and modern diets and food systems.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1090 - HISTORY OF MEDICINE AND HEALTH CARE**
Minimum Credits: 3
Maximum Credits: 3
Provides an overview of the social history of medicine from prehistory to the present. Focuses on the emergence of medical institutions, education, theories, practices and the Orthodox and irregular medical sects. Describes the growth of the separate health disciplines of nursing, pharmacy and public health. Examines the impact of socioeconomic factors, religions and war on the evolution of medical science. Discusses the changing roles of government in the development of the American health care system.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1091 - GLOBAL HEALTH HISTORY: HISTORICAL PERSPECTIVE

Minimum Credits: 3
Maximum Credits: 3
This course explores the history of global public health from 1850-present. It focuses on the social, political, economic, environmental, and cultural factors that have influenced the development of global health generally and also shaped specific interventions and policies. What are the political and economic roots of health disparities? Why do interventions succeed or fail and what are their long-term consequences? What can we learn from studying the continuities and disparities between modern global health policies and past programs? Historical analysis of theory and practice provides crucial perspective on the field.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1095 - SPORT AND GLOBAL CAPITALISM

Minimum Credits: 3
Maximum Credits: 3
The history of sport and global capitalism is designed for students seeking to make their way as professionals and/or for those interested in global sport as a social and political force both in the US and around the world. Focusing on the evolution of sport as a global industry and the creation of an imposing scholastic, community, and non-profit infrastructure, it equips students to understand and navigate those arenas. If, after graduation, students venture into the sports industry, scholastic sport, or sport for development, they should do so with their eyes wide open.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1102 - UNITING EUROPE. THE HISTORY OF THE EUROPEAN UNION

Minimum Credits: 3
Maximum Credits: 3
This course deals with European integration, from the first attempts to create supranational structures after WWI to the creation of a European constitution and the eastward enlargement of the European Union in 2004. In addition to providing students with an overview of the history of the European integration and of the institutions of the European Union today, this course focuses on the various ideas and concepts under lying the integration.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1108 - COMPARATIVE EUROPEAN HISTORY

Minimum Credits: 3
Maximum Credits: 3
This non-honors course compares two European states in the Twentieth Century. The focus is on social history.
Academic Career: Undergraduate
HIST 1109 - FRANCE, SPAIN AND ITALY IN THE 20TH CENTURY

Minimum Credits: 3
Maximum Credits: 3

This course will compare three European countries, as a way of identifying the distinctive traits in each. We shall also hypothesize as to which of these traits are most likely to survive, and which even to thrive, in the Europe of the future. Although there are no prerequisites, students who can read a foreign language relevant to one of the three countries are particularly welcome.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1110 - MEDIEVAL HISTORY 1

Minimum Credits: 3
Maximum Credits: 3

Survey course in the social, political, economic and religious history of Europe from the Diocletian reforms to the year one thousand. Special attention to interpreting the primary documents and to integrating various areas of activity (e.g. economic and religious). Focus on France, England, Germany, and Italy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1111 - MEDIEVAL HISTORY 2

Minimum Credits: 3
Maximum Credits: 3

Survey course in the social, political, economic and religious history of Europe from the year 1000 to the Black Death. Special attention to interpreting the primary documents and to integrating various areas of activity (e.g. economic and religious). Focus on France, England, Germany, and Italy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1114 - MEDIEVAL SPAIN

Minimum Credits: 3
Maximum Credits: 3

The course Medieval Iberia stresses the conflicts and encounters between Christians, Muslims, and Jews. Through the analysis of a wide variety of selected and translated primary sources as well as modern historiography, the course presents the main entities and processes evolving in Iberia from 711 to 1492. The major cultural entities approached are: Al-Andalus, Hispania, and Sefarad. The main processes are: the consolidation of states, the unfolding of military campaigns, the development of cultural interactions, and the transformations of the economic and social life.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1115 - THE WEST AND THE WORLD

Minimum Credits: 3
Maximum Credits: 3

From the time of Columbus to that of William Pitt, Europe developed its knowledge and power in a way that enabled it progressively to dominate the world. Around the globe, Europeans reshaped, or destroyed, or failed to affect, the peoples whom they "discovered". This course attempts to explain
Europe's rise to dominance, by comparing the West to the societies of Islam and of East Asia. It also explores the various kinds of cultural contact between Europeans, and Africans, Asians, and Amer-Indians, from the 15th to the 18th century.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1116 - INTRODUCTION TO THE RENAISSANCE**

Minimum Credits: 3  
Maximum Credits: 3  
The idea of the Renaissance is central to Western culture. Many of our values and tastes devolve from—or consciously react against—patterns that were established or reinterpreted five hundred years ago. The student who explores the renaissance, therefore, gains hold of one of the keys of Western civilization. He or she also acquires practice in critical reading, discussion, and the written expression of ideas.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1121 - TUDOR ENGLAND**

Minimum Credits: 3  
Maximum Credits: 3  
The Tudor period - the age of Henry VIII and Elizabeth I is generally looked upon as a Golden Age of English culture. It was also a period of considerable social and political change when, under the impact of the Renaissance and reformation, as well as an economic revolution, the traditional medieval world gave way to one which was recognizably modern. Shakespeare's Hamlet, Bacon's advancement of learning all emerge from this culture. This was also the century during which London came to control the destinies of Wales, Scotland and Ireland.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1123 - MODERN BRITAIN**

Minimum Credits: 3  
Maximum Credits: 3  
Political, economic and social change in Britain from the early 18th century to the present are examined in depth. Topics include the pre-industrial social structure, the origins of political stability, the making of the Industrial Revolution, popular protest and political reform, Britain's supremacy during the Victorian era, imperialism and the rise of labor, the impact of total war, and the emergence of the welfare state. A discussion of Britain's future prospects concludes the course.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1124 - NORTHERN IRELAND: THE TROUBLES - 1969-1994**

Minimum Credits: 3  
Maximum Credits: 3  
Ex-republicans and loyalists: "you've been in Belfast for 2 weeks. Do you understand the conflict any better now?" Pitt students: "no. We are more confused now than when we arrived." Ex-prisoners: "good! You've learned something." Contradictory? Confusing? Confusing? All of the above? If you say, '"all of the above" then you will find this class "intriguing." You will move beyond the "inherited histories" concerning the conflict in Ireland and investigate the roots of the Irish conflict. By the end, you will come to realize that history is rarely black and white and that there are many "truths" and shades of grey.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
HIST 1126 - FRENCH REVOLUTION

Minimum Credits: 3
Maximum Credits: 3
This course will consider various theories of the social sources of revolutions and evaluate them in the light of historical research.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1128 - MODERN FRANCE-I 1780-1880

Minimum Credits: 3
Maximum Credits: 3
A history of France between the fall of the old regime and the foundation of the third republic.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1131 - THE RISE OF THE GERMAN EMPIRE

Minimum Credits: 3
Maximum Credits: 3
A lecture course on German history from the foundation of the North German federation to the end of World War II. While the structure of the course is shaped by the main political changes, considerable attention is given to the evolution of society, and to cultural and intellectual life as well.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1132 - GERMANY IN THE COLD WAR

Minimum Credits: 3
Maximum Credits: 3
This course examines the history of Germany from World War I to the present by studying German history in its international context. Students will learn to distinguish between political, social, economic and cultural trends that were specific to Germany from those that were common throughout Europe and beyond. Topics include WWI's impact on European societies, the economic and political crisis of the interwar years and the explosion of creativity, the establishment of the Nazi State, WWII as turning point of European and global history, Germany's Cold War division and the unexpected reunification of 1990, as well as European integration as the game-changing innovation of the postwar years.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1135 - BERLIN: HISTORY OF A EUROPEAN METROPOLIS

Minimum Credits: 3
Maximum Credits: 3
Berlin is not just the capital of Germany. It is a city that is shaped more than any other place in Germany by this nation's dramatic past during the 19th and 20th century. All the ups and downs of Germany's modern history have left their traces especially in Berlin. This course looks at the German past from the 19th century to the present by using Berlin as an exemplary place. Besides giving an overview of the history of Germany in general and Berlin in particular, this course investigates to what degree the history of a place can be read through its visual appearance.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
HIST 1138 - FULBRIGHT SEMINAR IN ITALIAN STUDIES

Minimum Credits: 3
Maximum Credits: 3
The Fulbright seminar in Italian studies is the spring-term undergraduate-level course offered by the visiting Fulbright distinguished scholar from Italy. This course is typically offered in the fields of art history, cultural studies, film, history, literature, museum studies, political science, or urban studies.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

HIST 1141 - SPAIN AND PORTUGAL IN THE 20TH CENTURY

Minimum Credits: 3
Maximum Credits: 3
In 1898 Spain lost its empire during the Spanish-American War. Portugal, instead, preserved its empire for most of the 20th century. This divergence resulted in different developments such as a Civil War in Spain (1936-1939) and a political revolution in Portugal (1974). However, both countries also shared similar experiences: long-lasting authoritarian regimes, democratic transitions, and incorporation into the European community. The course tackles the singularities, commonalities, and connections, and places them in global context.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1144 - THE PORTUGUESE EMPIRE AND EARLY MODERN GLOBALIZATION

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the study of the Portuguese overseas empire in the early modern period by adopting a non-conventional perspective. In addition to offering a chronological and geographical framework of Portuguese expansion, the course will focus on the political, social and cultural interactions that emerged from the permanent contact of Europeans with non-European societies in Africa, Asia and the Americas. The course considers Portuguese overseas expansion within the broader context of the early modern world and investigates notions of globalization.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1145 - INTELLECTUAL FOUNDATIONS OF CAPITALISM

Minimum Credits: 3
Maximum Credits: 3
This course explores the salient features of European economic development from the black plague of the Middle Ages to the Great Depression of the 1930's. The emphasis will be to understand how social, demographic, and economic processes interacted and ultimately culminated in one of the most momentous events in the history of mankind, the Industrial Revolution. We shall venture an explanation for why Europe was the first continent and England the first country to industrialize. The social changes in the aftermath of the Revolution will also be covered.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1153 - EUROPEAN INTELLECTUAL HISTORY 2 1870-1940

Minimum Credits: 3
Maximum Credits: 3
A course of readings and discussions focused on major texts in the European intellectual tradition from the age of positivism to World War II. There will be occasional lectures, especially on the social and institutional contexts, but the predominant emphasis will be on class discussions of primary readings.
HIST 1157 - HISTORY OF MAPS AND SPATIAL REPRESENTATION

Minimum Credits: 3
Maximum Credits: 3
It has been famously been observed that "the map is not the territory." Any useful map must omit a great deal of information about the territory it represents, and must generalize information about the real world into a small number of highly schematized categories. All maps are based on particular technological affordances, executed within a certain cultural, political and historical context. Humans think visually about space, and almost every society, past and present, has developed some form of map making. However, the appearance of maps, the information that they include, and the purposes to which they have been put have all varied dramatically. Moreover, people often reject maps altogether in favor of travel guides, gazetteers and itineraries. Once written on paper, these now take the form of apps in our cars and on our phones. In spite of their diversity, all spatial representations encode some imagination about the world. All of them reinforce it on behalf of some group of people, and frequently at the expense of some others. This course explores how people have depicted the world, and with what consequences, from the stone carvings of the Neolithic era to the global positioning systems of today. In this course, students will create paper and digital maps, write papers, make presentations and engage in discussion in order to: 1) Reveal that representation of the world and its constituent places is historically and culturally specific. 2) Demonstrate how every mode of spatial representation reinforces particular social interests. 3) Detail how particular maps and changes in cartographic techniques have changed history. 4) Describe transformations in cartography and the way that they result from new technologies, politics, and ideologies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1164 - SMALL COUNTRIES AND THE EUROPEAN UNION

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the modern history of three representative small countries of the European Union--Denmark, Latvia and Greece'and upon their relationships with larger countries of the EU, and with the European Union as a whole. We will look at the long process, beginning in the 19th century, which brought each country to its present state, and at each one's current condition and problems as a member of the EU. We will use this knowledge to generalize the experience of all the 21 small countries of the EU, and to critique current models of governance and power in the European Union.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1173 - HISTORY AND MEMORY IN THE JEWISH TRADITION

Minimum Credits: 3
Maximum Credits: 3
Students will be introduced to the manner in which historians have studied and understood the Jewish experience from antiquity through the modern age. The role of historical study in the formation of Jewish identity will be especially highlighted.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1175 - XENOPHOBIA IN MODERN EUROPE

Minimum Credits: 3
Maximum Credits: 3
This course will examine Europe's post-war xenophobic, racist and exclusionary policies. We will use memoirs, photo-journalism, film and interviews to understand recent discrimination against refugees, guest workers, Jews, linguistic and religious minorities. We will also put the question
into scholarly context, as we examine how historians, sociologists, psychologists and anthropologists try to understand the way in which Europeans construct the categories of "us" and the "others".

**Academic Career: Undergraduate**

**Course Component: Lecture**

**Grade Component: LG/SNC Elective Basis**

**HIST 1180 - 19TH CENTURY BRITAIN**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Political, economic and social change in Britain from the early 18th century to the present are examined in depth. Topics include the pre-industrial social structure, the origins of political stability, the making of the Industrial Revolution, popular protest and political reform, Britain's supremacy during the Victorian Era, imperialism and the rise of labor, the impact of total war, and the emergence of the welfare state. A discussion of Britain's future prospects concludes the course.

**Academic Career: Undergraduate**

**Course Component: Lecture**

**Grade Component: Letter Grade**

**HIST 1181 - TWENTIETH CENTURY BRITAIN**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Political, economic and social change in Britain from the early 18th century to the present are examined in depth. Topics include the pre-industrial social structure, the origins of political stability, the making of the Industrial Revolution, popular protest and political reform, Britain's supremacy during the Victorian Era, imperialism and the rise of labor, the impact of total war, and the emergence of the welfare state. A discussion of Britain's future prospects concludes the course.

**Academic Career: Undergraduate**

**Course Component: Lecture**

**Grade Component: Letter Grade**

**HIST 1190 - MEDIEVAL GOVERNMENT AND SOCIETY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course deals with the emergence of the medieval state and its institutions, for example, systems of law (Roman, canon, and common law) and representative institutions. The course also focuses on certain aspects of intellectual life (for example, theories of kingship and constitutionalism) and forms of social, political, and economic organization (for example, feudalism and manorialism).

**Academic Career: Undergraduate**

**Course Component: Lecture**

**Grade Component: LG/SNC Elective Basis**

**HIST 1191 - ENGLISH ORIGINS OF AMERICAN LAW**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines the origins and development of English law with a view toward understanding the foundations of the American legal system. Keeping in mind that law is shaped by social, economic, and political considerations, we attempt to answer the question, "how did medieval and early modern English society solve certain problems with which all societies must eventually cope?"

**Academic Career: Undergraduate**

**Course Component: Lecture**

**Grade Component: LG/SNC Elective Basis**

**HIST 1197 - BLACK DEATH: PLAGUE AND HISTORY**
Minimum Credits: 3
Maximum Credits: 3
The Black Death, the great epidemic of 1347-1350's was the most profound epidemiological-ecological crisis Europe had ever experienced. Between 30 and 70% of the population of the western world vanished. In the wake of this demographic disaster economic, psychological, social, literary and even artistic processes were profoundly altered. This epidemic can be traced through extensive primary sources ranging from literature to art history - from population statistics through village desertions. This course will introduce these data and examine the consequences of the Black Death.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1220 - BETWEEN EMPIRES: A HISTORY OF POLAND

Minimum Credits: 3
Maximum Credits: 3
This course covers the period from Poland's final partition (1795) until the present day. The themes for the 1795-1914 era will be nationalism, economic growth and shifting cultural developments. The interwar period will stress the assaults on the attempt to foster economic growth and a democratic government. The last section deals with the impact of World War II and the relationship between the post-war communist system and the Polish society.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1225 - BALKAN HISTORY FROM THE OTTOMANS TO THE YUGOSLAV COLLAPSE

Minimum Credits: 3
Maximum Credits: 3
This course examines the history of the Balkan peninsula (Greece, Bulgaria, Romania, Albania, and the countries of the former Yugoslavia) and its peoples from the Ottoman Empire through to the collapse of Yugoslavia in the 1990s. It places particular stress on the dynamic experience of daily life against a background of regularly shifting political ideologies through the prisms of class, gender, and health. Additionally, it analyzes the conceptualization of what is meant by the term 'Balkans' as discussed by historians, philosophers, journalists, and writers.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1226 - EASTERN EUROPEAN COMMUNISM AT THE MOVIES

Minimum Credits: 3
Maximum Credits: 3
After the 1917 revolution in Russia, Lenin famously said: "to us film is the most important of all the arts." Communists were to use cinema for propaganda purposes, in order to carry out massive state-wide campaigns aiming to bring radical social change. However, Soviet avant-garde filmmakers were also concerned with revolutionizing filmmaking itself. Some three decades after Lenin's remarks, the leaders of the countries of Eastern Europe which had become "Soviet satellites" after World War II, attempted to use censorship and control over the arts and cinema to produce effective propaganda for their own political campaigns. Writers, artists, and filmmakers were coveted allies of these new communist regimes that came to power in the 1940s. Again, however, filmmakers and actors did not always toe the Party line. Some were able to use film to craft complex works with subtle messages portraying aspects of daily life as it was experienced by ordinary people under the new regimes. Films that we will watch and analyze, released in Hungary, Romania, Yugoslavia, Poland, and Czechoslovakia in the decades before the fall of communism in 1989 managed to depict, evoke, and criticize "really existing communism." This course will trace the history of East European communism and of East European film-making from 1944 to 1990, acquainting students with examples from an exceptional body of cinematographic work together with the broad outlines of East European history. Students will learn to "read" films from 20th century Eastern Europe in their cultural, political, and historical context.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
HIST 1240 - POLITICAL EAST EUROPE

Minimum Credits: 3
Maximum Credits: 3
The lives and times of the people and states of "the lands between" of Eastern Europe are examined in terms of three forces that have shaped their contemporary cultures, their chronic and multi-dimensional "between-ness" on the political and cultural map of Europe, and the influence of a succession of modern ideologies (from nationalism and liberalism to fascism and communism) on their institutions and behavior.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1250 - INDEPENDENT STUDY: CZECH REPUBLIC AND POLAND: IMPACT OF EUROPEAN UNION AND GLOBALIZATION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1270 - MODERN EASTERN EUROPEAN JEWRY

Minimum Credits: 3
Maximum Credits: 3
This upper level undergraduate course surveys the history of the historically most numerous portion of European Jewry from the medieval period to the present, emphasizing the modernization of east-central European Jews as minorities in the context of their host societies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1313 - HISTORY OF RUSSIAN REVOLUTION

Minimum Credits: 3
Maximum Credits: 3
This course examines the origins, contours, and dynamics of the Russian Revolution of 1917, as well, as the period 1918-1921 during which the new Soviet State fought for its survival.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1314 - USSR 1918-1932

Minimum Credits: 3
Maximum Credits: 3
This course examines the first 15 years of Soviet rule during which the fate of the Revolution of 1917 was determined. The Civil War, new economic policy, collectivization of agriculture, five-year plan, and cultural revolution receive concentrated attention.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1315 - STALIN
Minimum Credits: 3
Maximum Credits: 3
This course examines the USSR during Stalin's reign, 1929-53. Each facet of his reign—industrial development, collectivization, class war, and repression—receive detailed attention as does WWII and the Cold War.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1326 - RUSSIA AND THE WORLD

Minimum Credits: 3
Maximum Credits: 3
This course addresses itself to the following question: why societies outside the American and West European sphere find it difficult, impossible and/or undesirable to adopt (or adapt) the liberal-democratic-individualistic socio-political system (China, Iran, etc.), which Western opinion deems optimal?
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1344 - RUSSIAN REVOLUTION MOVEMENTS

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to examine the two major revolutionary movements of the second half of the 19th century in Russia: populism and Marxism. Readings include secondary and primary sources. The objective is to train students to analyze and evaluate different sorts of historical evidence.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1385 - EUROPE SINCE 1945

Minimum Credits: 3
Maximum Credits: 3
History of Western and Eastern Europe: the Postwar reconstruction, communism in Eastern Europe; Europe in the Cold War; economic, social and cultural changes; the Revolutions of 1989.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HIST 1418 - FORMS OF JAPANESE THEATRE

Minimum Credits: 3
Maximum Credits: 3
This course will provide a survey of various major forms of Japanese theatre using English language materials. Students will have access to relatively ancient forms of Japanese theatre such as Kagura and No, Kabuki drama and the Bunraku puppet theatre through film and videocassette. The modern and avant-garde theatre are also accessible through translation and videocassette material. This course is designed for upper class majors in theatre arts and non-majors in related fields.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1420 - ANCIENT CHINA
HIST 1422 - LATE IMPERIAL CHINA

Minimum Credits: 3
Maximum Credits: 3
From the sixteenth century, China was gradually drawn into the global economy. The effect of this economic change on China's traditional polity, culture, and society, 1550 to 1800, will be studied through lectures and classroom discussions of assigned readings.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1423 - MODERN CHINA

Minimum Credits: 3
Maximum Credits: 3
China's abandonment of its traditional political culture and its emergence in the Twentieth Century as a modern nation-state ruled by the Chinese communist party is the primary theme of this course, which will include lectures, readings, films, and classroom discussion.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1425 - HISTORY OF MEDICINE IN CHINA

Minimum Credits: 3
Maximum Credits: 3
This course examines the history of medicine in China in two parts. The first part examines the development of concepts and practices of health and medicine up to the mid-nineteenth century. The second part examines how the introduction of Western medicine changed the healthcare field, forced reforms, and created a dual system of institutionalized tcm and biomedicine.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1431 - HISTORY OF JAPAN TO 1868

Minimum Credits: 3
Maximum Credits: 3
This course surveys the history of Japan from the earliest beginnings to 1868. It is concerned with the creation of the Yamato state, the influence of Chinese institutions, the emergence of warrior rule, and the consolidation of power under the Tokugawa Shoguns. The course focuses on social and economic change and the adaptability of Japanese institutions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1433 - MODERN JAPAN
Minimum Credits: 3
Maximum Credits: 3
The history of Japan since 1800. This course stresses the modernization and economic development of Japan into the industrial giant it has become today. It also investigates the major by-product of that development, World War II, and the events that led to the war.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1434 - A SOCIAL HISTORY OF AESTHETICS IN JAPAN: FROM THE TEA CEREMONY TO ANIME

Minimum Credits: 3
Maximum Credits: 3
Through a survey of aesthetic practices ranging from the tea ceremony to surrealism, manga, and anime, this seminar introduces students to the ways in which Japanese society changed socially, politically, and culturally from the sixteenth century to today. Throughout these changes, multiple ideologies from liberalism to fascism, Marxism jostled against each other and multiple social movements from colonialism to nationalism, women's rights, and environmentalism shaped Japanese society. These social transformations were based not only on rational calculation but on attractions towards particular ways of life, attractions which we can study using the concept of aesthetics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1437 - THE WORLD OF THE SWORD: EXPLORING THE SAMURAI

Minimum Credits: 3
Maximum Credits: 3
Samurai is a Japanese word that has entered the English language. It emblazons everything from car models to china patterns. The very popularity of the concept of the warrior lifestyle has obscured its meaning. Through directed reading and writing the students will undertake an in-depth examination of the social, political, and economic world in which the samurai lived as a lens to understanding Japanese culture and Western perceptions of it.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

HIST 1446 - EAST ASIAN POLITICAL ECONOMY, 1950-PRESENT

Minimum Credits: 3
Maximum Credits: 3
This upper-level course compares the political, economic, and social development of East Asian societies over the past three generations, with a focus on Japan, South Korea, and greater China. It focuses on the political circumstances that have taken each country down the path it has taken, and how these paths now shape the future prospects of each country as well as of East Asia as a region. The first half of the course will focus on country-specific historical studies, tracing the development path each country has taken in the post-war period. Some common themes repeat themselves in each of the country case studies: the role of the state, the interaction between domestic and international factors, the relationship between bureaucrats and politicians, and the development of various institutions. Other topics and readings highlight national specificities, revealing unique circumstances that differentiate the experiences of one country from another. The second half of the course will focus on common themes and contemporary challenges shared by countries in East Asia including, but not limited to, rapidly aging populations, industrialization and green technology, competition for energy sources and commodities, and food security.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1470 - EURASIAN CURRENTS/ SILK ROADS OF THE COMMON ERA

Minimum Credits: 3
Maximum Credits: 3
This course investigates the transmission and adaptation of three categories of human culture (material technology, ideas, and images) across the great landmass of Eurasia from approximately 3,000 BC to the present century.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1475 - EAST ASIAN BUDDHISM

Minimum Credits: 3
Maximum Credits: 3
The transmission of Buddhism to East Asia was a momentous development in the history of world cultures and religions. Not only did it precipitate major changes in the cultures of China, Korea and Japan, it also was attended by transformations within Buddhism itself. Beginning with an introduction to the basic concepts of Buddhism, this course examines the major doctrinal, meditative, devotional, and institutional traditions and themes within Chinese and Japanese Buddhism in historical perspective. Particular attention is paid to the problems of transmission of thought and practices from one culture to another and to the ways in which Buddhism changed to meet those challenges and make itself relevant to the members of East Asian societies. We strive to develop an awareness of how Chinese and Japanese Buddhism interacted with and helped to shape East Asian history as well as to cultivate sensitivity to and appreciation of East Asian Buddhism as a contribution to our understanding of the human experience.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1476 - RELIGION IN CHINA

Minimum Credits: 3
Maximum Credits: 3
This course serves as a historical, doctrinal and practical introduction to the major religious traditions of China-both classical and modern-day.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1477 - RELIGION IN JAPAN

Minimum Credits: 3
Maximum Credits: 3
This course provides an historical overview of religion in Japan from the 3rd century BCE up to the present. It introduces many of the fascinating events, texts, doctrines, institutions, personalities, and practices in the history of religion in Japan. It also examines issues related to myth, shamanism, ritual, art, and politics. During the course, questions such as the following are addressed: How did religious institutions both condemn and condone violence? What are the different paths to enlightenment in Japanese Buddhism? What made a person "holy"? Why did the government make people step on pictures of Jesus?

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1480 - CHINESE THOUGHT

Minimum Credits: 3
Maximum Credits: 3
Designed for honors college students to discern and to appreciate the Chinese way of thinking by reading English translations of text by relevant thinkers. Class discussion will be to compare and contrast Chinese thinking with that of America today.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1482 - BUDDHISM ALONG THE SILK ROAD

1795
Minimum Credits: 3  
Maximum Credits: 3  
This class serves as an introduction to Buddhism from its origins through the seventh century CE as it moved along the Silk Road, the ancient Eurasian trading network that is considered one of the earliest and most important super highways of trade and culture. Concomitantly, it serves as an introduction to the silk road as the scenario for contact and exchange. The emphasis is on religious praxis, the actors and places that transformed Buddhism and were transformed by it. We will examine archaeological remains and art and discuss how they complement or sometimes contradict textually-based historical narratives. Through the examination of four case studies we will discuss questions related to religious interaction as embodied in material culture and analyze it in context.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1484 - DEATH AND BEYOND IN BUDDHIST CULTURES

Minimum Credits: 3  
Maximum Credits: 3  
Death and beyond in Buddhist cultures mortality is the human condition. This seminar focuses on the philosophical discourse, beliefs and practices relating to death, dying and the afterlife in Buddhist cultures, both traditionally and in modern times. We explore Buddhist cosmology, karmic causality, death tales, postmortem journeys, ancestor rites, mortuary practices and ghost placation. Through primary texts in translation, secondary scholarship, discussion and film, we see how dealing with death tells us as much about life as it does about what lies beyond.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

HIST 1511 - VIOLENCE & MEMORY IN LATIN AMERICA

Minimum Credits: 3  
Maximum Credits: 3  
How do societies that have endured state terror deal with the memory of that collective trauma? In multiple cases, 20th c. Latin American governments used violence against civilians to silence opposition and defend entrenched privilege. What factors make state terror possible? How do people make sense of 'unspeakable' events? Students will focus on case studies from Central America, the Caribbean, and South America. Analyzing materials including novels, films, family stories, documentaries, and museums, we will explore the making of historical memory, and assess its political consequences.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

HIST 1522 - BRAZIL

Minimum Credits: 3  
Maximum Credits: 3  
The course begins with an overview of Brazilian culture and of the country's enormous resource base. Cultural change is traced through the pre-Columbian, colonial, imperial, and republican periods. A major theme throughout is the evolution of a Portuguese heritage into today's distinctive Brazilian national culture. The country is then divided into five regions as a means of understanding its internal diversity. Popular American ideas about subjects like carnival, the Amazon Rainforest, coffee, Copacabana Beach, and the huge foreign debt are also dealt with.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1525 - MEXICO, AZTECS TO THE PRESENT

Minimum Credits: 3  
Maximum Credits: 3  
Mexican history from the Aztecs to the present. We will discuss the conquest, the Colonial Era, the struggle for independence, nineteenth-century
liberalism, the porfirian dictatorship, the Twentieth-Century Revolution, the formation of a single party state, the temptations of socialism, the oil boom, the debt crisis, and the "crisis of the system" now being experienced by Mexico.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1526 - CUBA, COLUMBUS TO CASTRO

Minimum Credits: 3
Maximum Credits: 3
A study of Cuba since its discovery. Treatment will be chronological. The 20th century will be stressed. Texts such as Suchlicki, Cuba or Perez, Cuba will be read.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1541 - HISTORY OF THE EARLY CARIBBEAN TO EMANCIPATION

Minimum Credits: 3
Maximum Credits: 3
This course will consider the early history of the Caribbean.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1560 - WOMEN IN LATIN AMERICAN HISTORY

Minimum Credits: 3
Maximum Credits: 3
A course tracing the history of women in Latin America from the conquest to the modern day.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

HIST 1585 - US-LATIN AMERICAN RELATIONS

Minimum Credits: 3
Maximum Credits: 3
A survey of US-Latin American from 1800 to the present.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1586 - LATIN AMERICAN REVOLUTIONS

Minimum Credits: 3
Maximum Credits: 3
A comparative examination of instances of social and political revolution in Latin American history. Cases considered include the Haitian Revolution (1791-1804), the Mexican Revolution (1910-1917), the Bolivian Revolution (1952), the Cuban Revolution (1959).
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
HIST 1604 - RACE AND RELIGION
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1610 - UNITED STATES COLONIAL
Minimum Credits: 3
Maximum Credits: 3
This is an upper division course that develops the history of the North American English colonies from around 1400 through the early 1760s.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1611 - AMERICAN REVOLUTION 1763-1791
Minimum Credits: 3
Maximum Credits: 3
This is an upper division course that considers the history of Revolutionary America between the 1750s and the 1790s.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1612 - UNITED STATES 1789-1840
Minimum Credits: 3
Maximum Credits: 3
A history of ideas -- social, literary, scientific, political -- that expressed and shaped the culture.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1613 - PEOPLE'S REPUBLIC OF CHINA
Minimum Credits: 3
Maximum Credits: 3
This course traces the revolutionary process which brought the communist party of China to power. Changes which have occurred socially, politically, and economically are explored, as are the relations with the countries of Asia, the United States, and various international bodies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HIST 1614 - CIVIL WAR HISTORY
Minimum Credits: 3
Maximum Credits: 3
This is an upper division course that considers the impact of the Civil War upon the development of the United States.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
HIST 1617 - UNITED STATES IN THE 1960'S

Minimum Credits: 3
Maximum Credits: 3
This course explores American politics, culture, and society in the 1960s. Topics include the "Camelot's" years of the Kennedy administration, the great society, the Vietnam War at home, the civil rights movement and the rise of the new left and women's liberation movements, rock and roll, the sexual revolution and the counterculture, and the emergence of new age spirituality.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HIST 1619 - UNITED STATES SINCE 1945

Minimum Credits: 3
Maximum Credits: 3
Social, economic, and political changes in American society since World War II. Topics include the post-industrial economy, urbanization, women, minorities, education, political movements, government, parties, and political participation. Emphasis is on the massive changes during those years and the impact on people, institutions and government.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1621 - HISTORY OF THE SOUTH THROUGH THE 1880S

Minimum Credits: 3
Maximum Credits: 3
This class will give students experience of dealing with the history of a region within the United States and will permit them to place the history of the South within the context of developments within the nation as a whole. It will also play an important role in expanding our knowledge dealing with slavery and the history of a broadly defined Atlantic region which includes Western Europe, Africa, and North and Latin America.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1625 - HISTORY OF THE AMERICAN FRONTIER

Minimum Credits: 3
Maximum Credits: 3
This course explores the settlement and development of frontier regions across the continent, emphasizing 19th century experiences. Diverse and distinctive frontier societies emerged from the processes associated with land acquisition, exploration, Indian relations, Westward migration, economic development, social organization, governance, and urbanization. The different and conflicting interpretations of the frontier experience raise important questions and perspectives about the character of American society.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1627 - RELIGION AND LAW

Minimum Credits: 3
Maximum Credits: 3
Religion and law examines the role of religious freedom in American history, from colonial days to the present, focusing on documents that predate the First Amendment of 1791, as well as upon central supreme court cases that helped define what "legal religion" means as a category in the United States. Students will read court cases and become familiar with arguments for and against the ideal of religious freedom, including court cases involving the Amish, Mormons, Santeria, and the use of religious symbols in public places.
Academic Career: Undergraduate
HIST 1631 - HISTORY OF THE AMERICAN LEFT IN THE TWENTIETH CENTURY

Minimum Credits: 3  
Maximum Credits: 3  
An upper division undergraduate writing and research seminar on the History of the American Left.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

HIST 1640 - AMERICA CHILDHOODS: RACE, GENDER, AND CITIZENSHIP, 1865-PRESENT

Minimum Credits: 3  
Maximum Credits: 3  
In this course, we will consider the diverse experiences of children and youth in the United States from the mid-nineteenth century to the present day. We will examine how race, class, gender, sexuality, and citizenship informed children's agency and experience, and were in turn influenced by the imposition of ideals of childhood through government policies, medical standards, and educational norms. Special consideration will be given to youth movements, and the role of children and youth in the civil rights movement and other forms of political and social activism. With a few exceptions, the course will offer a consideration of a topic in each decade since the 1860s.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1641 - MODERN AMERICAN POLITICS

Minimum Credits: 3  
Maximum Credits: 3  
This course examines four party systems: (a) years of party rivalry (1854-1894) in which civil rights and property rights successively dominated the national scene, (b) years of republican dominance (1894-1930) in which sweeping domestic reforms and emerging world responsibilities held the limelight, (c) years of democratic dominance (1930 1968) in which an economy of abundance and responsible internationalism provided the major challenges, and (d) years of participatory democracy (1968-present).  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1645 - AMERICAN ECONOMIC HISTORY

Minimum Credits: 3  
Maximum Credits: 3  
The course presents a survey of the strategic factors in the economic development of the United States from colonial times to the great depression. The topics covered include the record of economic growth, the process industrialization and its major phases, British mercantilism, the role of technological change, demographic history, the slave economy, distribution of income, urbanization, and the financial sector.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1653 - COLD WAR AMERICA IN THE WORLD

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the impact of the Cold War on the American home front during its years of peak influence, 1945-1965. We will investigate the postwar division of the world into two opposing camps, and then take up topics such as McCarthyism, American reactions to the atomic bomb, the
culture of consumption, suburbanization, and youth culture. We will ask how the Cold War climate fostered (or hindered) social movements for racial equality, participatory democracy, and women's rights. At its close, the course asks which hallmarks of the early Cold War - from lonely crowds to paranoid politics - persist today.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1655 - AMERICAN WORKERS 19TH CENTURY

Minimum Credits: 3
Maximum Credits: 3
This course examines American working class formation, development, and recomposition during the nineteenth century, and workers' impact on American economic, political, and cultural development.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1656 - AMERICAN WORKERS 20TH CENTURY

Minimum Credits: 3
Maximum Credits: 3
This course examines the experiences of American workers during the second Industrial Revolution of the early Twentieth Century, the emergence of a government-sponsored national system of labor relations in the 1930s and 1940s, the structural changes in the economy and labor force since 1950, and the subsequent breakdown of the new deal formula for class relations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1660 - GENDER AND SEXUALITY IN THE US TO 1865

Minimum Credits: 3
Maximum Credits: 3
This upper-level course is part of a two-course sequence which surveys the history of women in the United States. Part 1 focuses on women's experiences from the 1600s to the 1880s with special attention to class, ethnic, and geographic differences among women.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1661 - GENDER AND SEXUALITY IN THE US SINCE 1865

Minimum Credits: 3
Maximum Credits: 3
This upper-level course is part of a two-course sequence which surveys the history of women in the United States. Part 2 focuses on women's experiences from 1865 to the present with special attention to class, ethnic, and geographic differences among women.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1665 - HISTORY OF THE AMERICAN CITY

Minimum Credits: 3
Maximum Credits: 3
This course examines the development of the American city from its colonial origins to its postindustrial expression after the mid-20th century. The growth of an urban system across the nation is briefly addressed. Most attention is focused on the evolution of the city's economy, geography, social
organization, and governance under the forces of rural in-migration, foreign immigration, industrialization, and changing technologies of transportation, communication, and energy.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1668 - HISTORY OF PITTSBURGH**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course explores the development of Pittsburgh's life and landscape from its frontier origins in the 18th century to its Renaissance of the mid-20th century. The city and its region are addressed as a case study in American social history and urbanization. Pittsburgh offers the opportunity to examine the transformation from a commercial city to an industrial metropolis with the attendant social, political, labor, and redevelopment issues which characterize American urban life.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1669 - HISTORY OF BLACK PITTSBURGH**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will explore the role and experiences of black Pittsburghers over the past 200 years of the city's history.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis


**Minimum Credits:** 3  
**Maximum Credits:** 3  
August Wilson is recognized as one of America's leading playwrights. His plays form part of America's literary canon. Wilson wanted his cycle of ten plays - each set in Pittsburgh in a different decade of the twentieth century - to provide a chronicle of the black urban experience. At the same time, the protagonists of Wilson's plays, as he himself once said, "all come out of me, they are - probably - the different aspects of my personality." This course will enable students to grapple with two questions coming out of this: (1) to what extent Wilson's plays re-create the twentieth-century urban black experience; and (2) the extent to which, rather, the plays reflect Wilson's own identity and persona.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1671 - RELIGION AND CULTURE IN AMERICA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will cover issues related to religion and how it intersects with American culture particularly in modern time.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**HIST 1672 - RELIGION AND SEXUALITY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Though American political ideologies have often tried to situate both sexuality and religion as private matters that have no bearing on public life, the
topics we discuss in this course reveal that quite the opposite is true. This course will trace how religion and sexuality have played an intertwined and formative role in the development of the political and social history of the United States. We will take a chronological approach to our subjects, locating the intersections between religion and sexuality throughout the course of American history, from Puritan attempts to control women's sexuality to contemporary debates over reproductive rights and same-sex intimacy.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1675 - ETHNICITY IN AMERICAN RELIGION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
An exploration of the role of religion as a force for ethnic solidarity and cultural resistance.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1676 - POPULAR RELIGION IN AMERICA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students will examine forms of religion that are called everyday, folk, local, or popular traditions, in contrast to "official" denominational categories that so often dominate the study of religion. With our focus on the western hemisphere, we will learn about new local practices that have emerged since 1492 among African, Caribbean, and native American peoples and to analyze how they represented responses to colonization, industrial capitalism, or globalization. Examples of popular traditions that we will study include: witchcraft; santeria, voodoo, saint's cults, miracles, pilgrimages, speaking in tongues, faith-healing and snake-handling. The course method is interdisciplinary, drawing upon anthropology, documentary film, history, religious studies, psychology, and sociology.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1677 - AMERICAN JEWISH EXPERIENCE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
We analyze the Jewish experience in America since the middle of the 18th century.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1683 - NORTH AMERICAN INDIANS TRADITIONAL CULTURES**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines the effects of European conquest upon North American Indian cultures (1550-1900).  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1685 - U.S. POPULAR CULTURE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines the development and social impact of mass-produced and mass-consumed forms of culture in Twentieth Century America.
HIST 1686 - WAR AND MILITARY IN UNITED STATES

Minimum Credits: 3
Maximum Credits: 3
A lecture-discussion course on the roles military systems play in international and national affairs, as well as in the social and economic life of the U.S. The effects that wars and military service have on the individual, the family, the economy, and politics are also addressed. This is not a course on battles, tactics, logistics, strategy, and command. It is concerned with recruitment and social origins of military personnel; training and value inculcation; combat behavior and morale; war crimes and the laws of war; civil military relations; veterans; and inter-service rivalry.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1687 - U.S. FOREIGN POLICY IN AFRICA

Minimum Credits: 3
Maximum Credits: 3
This course will focus on the increasing engagement of the United States in Africa from the late 19th century until the present. Using a case study approach, students will analyze American foreign policy in Africa and explore the varied effects of those policies. These case studies will include the political realities of decolonization, the Cold War, and economic aid and the social and cultural ties of black Americans to Africa. The course will identify specific crises in American and African history as focal points for study, but will also provide a larger narrative about American involvement in both the colonial and post-colonial development of Africa.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1690 - AMERICAN LEGAL HISTORY

Minimum Credits: 3
Maximum Credits: 3
A lecture-discussion course on the creation, transformation, and administration of the common law and equity from the 17th century to the present, its devolution from England and its evolution in America. Courts, the bar, legislatures, regulatory agencies, police, prisons, and the Constitution are all addressed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1691 - LATINO HISTORY

Minimum Credits: 3
Maximum Credits: 3
This course will analyze the forces shaping population movements between Latin America and the United States and how these have evolved over time. We will explore how Latino immigrants have integrated, resisted, and adapted to the forces impacting their lives in the United States over the last century and a half, creating new ethnic, racial, and regional identities in the process. We uncover the varied experiences of Latinos and Latin American immigrants with racism and discrimination, identity formation, community building, work and labor struggles, and social mobility as we map out the heterogeneous mosaic of Latin American and Caribbean diasporas in the United States.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1692 - LGBTQ IN THE USA, 1900-PRESENT
Minimum Credits: 3
Maximum Credits: 3
With growing contemporary interest in LGBTQIA issues and student activism surrounding gender identity and sexuality, this course provides necessary historical context for understanding such political and cultural phenomena in 20th-century U.S. history. It charts the trajectory of different identities and sexualities (too often classified as transgressive or deviant) from the beginning of the century through post-World War II efforts to seek greater freedom and inclusion in American society.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1695 - ENVIRONMENTAL HISTORY

Minimum Credits: 3
Maximum Credits: 3
Environmental affairs since World War II with an emphasis on policy controversies. Topics include air and water pollution, public lands, wildlife, energy, toxic chemicals, urban environment, facility siting and more. Emphasis on the rise of environmental values in American society, the resulting policies, opposition to them, and the role of science, economic analysis, technology and management in the public debate.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1706 - GLOBAL PHARMACEUTICALS

Minimum Credits: 3
Maximum Credits: 3
This course examines the global development of the modern "pharmaceutical era" through historical, anthropological, and sociological analyses. It traces the ever-increasing role played by chemical substances in shaping conceptions of health, treatment, and society itself from the early modern period until the present day. Topics include pharmaceuticals as an arena for competing and complimentary interests, the social character of drugs (both legal and illegal), the blurred lines between medicinal and recreational use, and the evolvement of government and scientific regulation of medications.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1707 - GENDER IN GLOBAL HISTORY

Minimum Credits: 3
Maximum Credits: 3
This course examines world history from 1500 through the present from the perspective of gender. It provides an introduction to modern world historical patterns and processes, with a focus on issues of women, gender, and sexuality. The course considers the construction of gender in pre-feminist and post-feminist contexts, and explores how global historical developments have shaped ideologies and politics of gender. The course emphasizes topics including slavery, colonialism, imperialism, industrialization, nationalism, and environmentalism, through the lens of gender.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1709 - GLOBAL HISTORY OS SCIENCE FROM THE 17TH TO THE 20TH CENTURIES

Minimum Credits: 3
Maximum Credits: 3
Entails the exploration of a fairly new sub-field within world history: the study of long-distance, transnational, inter-cultural circuits of scientists, texts, instruments, and discourses between approximately 1500 and the present. Focusing on scientific developments in the Americas, Asia, and Africa, this course interrogates Eurocentric accounts of the history of knowledge.
Academic Career: Undergraduate
HIST 1710 - JEWISH MYSTICISM

Minimum Credits: 3
Maximum Credits: 3
Mystical traditions and practices including Kabbalism in Judaism through the early modern period are introduced and discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1711 - GENDER AND JEWISH HISTORY

Minimum Credits: 3
Maximum Credits: 3
This course will highlight the impact of gender in modern Jewish history, revealing the divergent experiences of Jewish women and Jewish men as they adapted to the modern world. We will take an international approach to this history, tracing the ways in which circumstances in Europe, America, and the Middle East shaped how Jews understood and responded to gender roles.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1712 - INVENTING ISRAEL: ZIONISM, ANTI-ZIONISM AND POST ZIONS,

Minimum Credits: 3
Maximum Credits: 3
In this course, we will study the origins and development of Zionism as a form of modern Jewish nationalism, the emergence of different Zionist ideological streams, and non-Zionist, anti-Zionist, and post-Zionist views of Jews and non-Jews. We will also explore Zionism as a case study of relations of religion and nationalism in modernity. This course is an opportunity to carefully study and to contextualize writings and ideas of religious and political thinkers that have been both influential and controversial. The goal is to offer students historical background to ideas and issues of contemporary importance as well as skills in interpretation and contextualization of complex texts that continue to inform public discourse.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1714 - DEATH IN MEDITERRANEAN WORLD

Minimum Credits: 3
Maximum Credits: 3
In many cultures, people sometimes ask fundamental questions about their existence, including, "what happens after we die?" This course will focus on the evolution of beliefs and rituals related to death and the afterlife in and around the ancient Mediterranean Basin, including Egyptian, Greek, Etruscan, and Roman cultures. Using an interdisciplinary approach, we will combine methodologies from anthropology, classics, history, and religious studies. Topics to be covered include myths of the afterlife, books of the dead, magic and death rituals, funeral practices and paraphernalia (disposal of the dead), cults of the dead, divinization, heaven and hell, judgment, and the impact of Christianization on the ancient understanding of death.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1715 - EMPIRES IN THE MODERN WORLD

Minimum Credits: 3
Maximum Credits: 3
Through lecture and discussion, this course reviews empires in world historical context. Themes of governance, economy, war, culture, social organization, and colonies and decolonization are explored in three segments: empires 1400-1800, 1800-2000, and the future of empire.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**HIST 1716 - INDIAN OCEAN WORLD HISTORY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Explores the Indian Ocean world from the rise of Islam through the 19th century age of imperialism. Shows how global networks and connections created a vibrant system of economic, technological, and cultural exchange. Begins with interactions of the various peoples, states, and religions of the Indian Ocean from the 8th to 15th century; then focuses on contributions of Europeans, showing how the Indian Ocean world became entwined in a global community. The course provides background to the centrality of the Indian Ocean in the world of today.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1720 - WEST AFRICA IN THE ERA OF THE SLAVE TRADE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course provides an introduction to the history the societies of West and West-Central Africa. It explores the enormous linguistic and cultural variation among these societies and examines their political, economic and social evolution during the centuries of the trans-Atlantic slave trade (roughly 1600 to 1850). Students are encouraged to think about how complex historical processes occurring around the entire Atlantic Ocean basin affected the development of states and societies in Western Africa.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1722 - MODERN SOUTH AFRICAN HISTORY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course will be organized chronologically and use specific conflicts (strikes, political demonstrations, repression, etc.) to focus on various key moments in South African history. The course will utilize both secondary readings from books and articles and a large number of primary materials (ranging from manifestos to novels to film) to generate discussion and further an understanding of the roots of conflict and creation of identity in modern South Africa. Labor and the organization of the work and production processes will be one lens through which ethnic and racial antagonism can be analyzed.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HIST 1725 - DISEASE AND HEALTH IN MODERN AFRICA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course explores the history of health, healing, and disease in modern Africa, focusing on the social, political, economic, and environmental aspects of illness and health. The course also provides an orientation to the changing burdens of disease in Africa in the past 300 years. Seeking to understand change and continuity in Africans' experiences of health and healing, how have historical processes shaped understandings of disease, misfortune, and illness? Within what contexts should health interventions be understood? How and when did health in Africa become a global issue?  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade
HIST 1731 - THE HISTORY OF GOD

Minimum Credits: 3
Maximum Credits: 3
God has a history. In the earliest days of that history, God was worshiped as one of a plethora of deities controlling various spheres of cosmic activity or the human world. Students in this course will learn about this ancient pantheon - how gods functioned in society and how their presence was experienced by those devoted to them. They will then trace the evolution of the God of Israel from a mountaintop deity of the southern Levant in the late second millennium BCE to a supreme deity worshiped by a small group of absolute monotheists based in Jerusalem in the mid-first millennium BCE. Students will become more sophisticated readers of biblical texts in the process. The sources of the Hebrew Bible reflect not a homogeneous monotheism, but rather a diverse set of belief systems tending toward henotheism or even polytheism. By appropriating and reinterpreting the religious myths of their neighbors, the Israelites arrived at a character of the divine that has proven problematic to many contemporary theologians, particularly on issues of LGBT rights, women's rights, and the environment.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1732 - GLOBAL CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
This course takes Christianity as a prism through which to consider the origins and growth of global religions. Christianity has tried to achieve a global status since its inception in the ancient Mediterranean world in the first century CE. Stemming from Paul's fateful decision to evangelize the Gentiles, Christianity has long sought to achieve a global network of believers, who now comprise about 20% of the world's population. We will study Christian globalization in the twentieth and twenty-first centuries and focus on two Christian traditions, Catholicism and Pentecostalism, as examples of religions that have deliberately and successfully globalized. We will ask if the contemporary values of and pluralism relativism are good for religions and religious people. And, where religion is no longer a powerful cultural force, what are the prospects for a purely humanitarian approach to common problems in a globalizing world?

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1733 - RELIGIOUS DIVERSITY

Minimum Credits: 3
Maximum Credits: 3
What is the best way to accommodate religious and cultural diversity within a nation-state and in civil society? How should individual rights to practice religion be balanced with communal needs? Should freedom from religion be protected as much or more than freedom of religion? These are pressing contemporary issues in many countries, including the United States, but issues of religious diversity and questions of whether and how to tolerate religious minorities have a long history. In this course, we will examine the toleration of minority religions in particular historical settings, and the issues and problems (both doctrinal and social/political) that societies grappled with as they confronted diverse religious landscapes. We will also use these historical precedents as a lens to examine contemporary examples of religious pluralism, diversity, and conflict. Case studies will mainly be drawn from pre-modern Europe and modern Europe and North America, but we will also look at Mughal and modern India and discuss religion in pre-modern China.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1740 - BUDDHIST MEDITATIVE TRADITIONS

Minimum Credits: 3
Maximum Credits: 3
This seminar examines the relationships between doctrine, practice and institution and the culture(s) in which they grow through examination of major themes and sources of authority in Chan/Zen Buddhism.

Academic Career: Undergraduate
HIST 1741 - POPULAR RELIGION IN CHANGING JAPAN

Minimum Credits: 3
Maximum Credits: 3
This seminar, through a thematic treatment of popular and civil religion, informed by religious and cultural history, looks at the process through which religion participates in shaping and reshaping worldviews, behaviors, and practices in modern Japan.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1746 - ATHLETICS OF THE ANCIENT WORLD

Minimum Credits: 3
Maximum Credits: 3
This course examines athletic competition, popular games, gladiatorial and other exhibitions of the ancient Greeks and Romans. Much emphasis on the social/cultural context and underlying values. Attention to relevant artistic archaeological, and historical settings.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1749 - ISLAM & CONFLICT IN GLOBAL CONTEXTS

Minimum Credits: 3
Maximum Credits: 3
This course will investigate political, social, and ideological conflict involving international political actors (both states and non-states) claiming motivation by, or inclusion within, the contemporary tradition of political Islam. Lecture topics within this course will take a global approach, analyzing political, social, and/or sectarian conflict in central and southern Europe (to include religious conflict and ethnic on the Balkan peninsula in the late twentieth century); southern and southeastern Asia (to include religious tension on the Indian subcontinent and on the island nation of Sri Lanka); East Africa (to include recent political violence centering around the self-declared caliphate "Boko Haram,"); and the middle east (to include ongoing international efforts to interdict against the expansion of the self-styled Islamic state in Iraq and Syria). Lectures in this course will aim to explore the means by which international conflict and violence involving these (and other) actors is bound by the tenets, institutions, or characteristics of Islam. These investigations will include inroads into a well-framed understanding of the recent increase in the presence and/or influence of Islamic political movements and the rising influence of international Islamic political parties in each of the aforementioned geographic locale. Course investigations will simultaneously explore the growing trend towards the transnational movement of goods, ideas, and peoples spurred on by or otherwise connected to the ideological tenets of contemporary Islam. The focus within these investigative pursuits will be on connective, global, and conceptual themes within seemingly disparate political movements and actors. Conceptual themes to be investigated include, but are not limited to the structures of global capitalism, economic inequality, gender inequality, minority rights, human rights, colonialism and imperialism, democracy and governance, modernity versus traditionalism, and secularism versus religiosity. Each of these themes is to be unraveled and explored in various contemporary global contexts focusing in particular on the polities and societies in the aforementioned conflict zones.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1753 - THE OTTOMAN EMPIRE (1300-1923)

Minimum Credits: 3
Maximum Credits: 3
This course traces the history of the Ottoman Empire from its origins as an obscure band of frontier warriors, to the highpoint of its geopolitical power in the sixteenth century, and on to its further evolution as an increasingly complex and peaceful society, down to the opening of the period of European imperialism and nation building. It will address not only the Ottomans' political power, but also those economic, social, and cultural factors that helped explain that power and gave the empire such a distinctive place in the history of Western Europe, Balkans and the Middle East.
HIST 1754 - RELIGION AND POLITICS

Minimum Credits: 3  
Maximum Credits: 3  
The purpose of this course will be to consider the public and political implications of religion in several different political systems. We will begin with an overview of the implications for politics of various types of religious systems. Religious beliefs and institutions have wide ranging implications for civic norms, public policy, political leadership, and the treatment of various social groups, including women and minorities.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1755 - UHC COMPARATIVE VIEWS OF FREEDOM 19-20TH CENTURY

Minimum Credits: 3  
Maximum Credits: 3  
An in-depth investigation of the conceptions and meanings of "freedom" as they developed in and out of the contexts of various societies in the 19th and 20th centuries.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

HIST 1757 - RELIGION IN INDIA 1

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to the religious traditions that have developed in the Indian subcontinent and their role in shaping the cultures of India.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1758 - RELIGION IN INDIA 2

Minimum Credits: 3  
Maximum Credits: 3  
Focusing on the modern period and on Hinduism, we examine recent developments in the history of religion in India.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1760 - JEWS AND JUDAISM IN THE MEDIEVAL WORLD

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to the facets of medieval and early modern Jewish life.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HIST 1761 - CONTEMPORARY ISLAM: INTERNAL DEBATES
From the second part of the 19th century, Muslim intellectuals have been involved in an intensive ideological/theological debate. While this debate was prompted by the strong presence and influence of the West, it has not been simply a debate between the Islamic fundamentalism and the Western world. The modernist and fundamentalist debates of the last century are primarily the internal debates around historically significant issues that transformed Islamic intellectual traditions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**HIST 1762 - RELIGION AND POLITICS OF THE MIDDLE EAST**

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the role of religion in the politics of the contemporary Middle East. A general survey of the role of religion in the history of the region, and a cross regional historical-comparative view of the relationship between religious phenomena and political movements and institutions set the context for an investigation of the politics of religion in recent developments in the region.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**HIST 1763 - POLITICS OF CONTEMPORARY MIDDLE EAST**

Minimum Credits: 3
Maximum Credits: 3
The main emphasis of the course will be on conflict and conflict resolution in the Middle East. Conflict has been a constant feature of the region since 1945. This course will be primarily concerned with how and why these conflicts are generated, escalate, become protracted, and are resolved.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**HIST 1765 - ISRAEL IN THE BIBLICAL AGE**

Minimum Credits: 3
Maximum Credits: 3
This course explores the history and development of the people of Israel in ancient times. What do we know about the Israelites and how do we know it? Using biblical texts and archaeological remains, students will learn about everyday life in ancient Israel, the role of class and gender, life-cycle events, religious festivals, political institutions, systems of belief, and famous personages in history and lore. The trajectory of the course will begin with the Near Eastern origins of the people, continue through the rise of the Israelite and Judahite monarchies, and end with the Second Temple commonwealth of Judea in the Persian and Hellenistic periods.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**HIST 1766 - MODERN ISRAEL AND PALESTINE**

Minimum Credits: 3
Maximum Credits: 3
We trace the history of modern Israel from the idea of the return in the second half of the 19th century through the state of Israel today.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**HIST 1767 - JEWS AND JUDAISM IN THE MODERN WORLD**
What is a "secular Jew?" How was medieval anti-Judaism different than modern anti-Semitism? How did German Jews go from being full citizens of their country to victims of genocide? What was the relationship between Middle Eastern Jews and European Jews during the age of colonialism? Why did some Jews think it necessary to build a nation of their own, while others were content to be citizens of non-Jewish states? In this course, we talk about these and other questions that are critically important not only to the history of Jews, but also to the history of the modern world.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1768 - CHRISTIANS, MUSLIMS, JEWS IN THE MIDDLE AGES: CONNECTION AND CONFLICT

Was the world of Europe and the Middle East before the Enlightenment a period of unending religious conflict and intolerance? Were Jews the victims of severe persecution and violence everywhere during this period? Did Christians and Muslims engage in unceasing religious wars? The answer to all three of these questions is no. While the Middle Ages were a period of conflict and competition between the three major western religious groups, they were also a time of coexistence and cooperation. This class shifts from extreme dichotomies and simplistic stereotypes to deeply examine the period in all of its complexity: what were the theological, political, and legal contexts in which Christians, Muslims, and Jews interacted in both Christian Europe and the Muslim world? How did these deeply religious societies organize themselves to tolerate the religious "Other"? When and why did toleration break down and lead to expulsion, forced conversion, or violence? What kinds of cross-cultural exchanges and cooperation take place in economic, cultural, intellectual, and social life? We will also look at new ideas of toleration (and intolerance) that emerged at the end of the Middle Ages and examine aspects of inter-religious encounters and dialogues today. We will discuss not only the significance of Jewish-Christian-Muslim interactions in the Middle Ages but also assess these encounters as a case study in the broader history of religious diversity, pluralism, and conflict.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1769 - HOLOCAUST HISTORY AND MEMORY

The holocaust - that is, the genocide of six million Jews in Nazi-occupied Europe during World War II - was a critical event of the early twentieth-century that continues to resonate today. Our historical survey will look at the holocaust primarily through the experiences of its Jewish victims, though we will discuss some of the other groups, such as the roma, disabled people, and gay men, who were also targeted and systematically murdered by the Nazis. Additionally, we will think about the perpetrators of the holocaust and the ideologies that led to the genocide, such as racism, nationalism, and antisemitism. Finally, we will move beyond the history of the holocaust to think about the ways that this event has been remembered and reconstructed by survivors, nations, institutions, museums, the arts, popular culture and the media. Looking at how institutions here in Pittsburgh commemorate the holocaust will offer us local, concrete examples of how people continue to grapple with this history.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1772 - RACE, CASTE AND ETHNICITY IN A GLOBAL PERSPECTIVE

This course will compare and contrast the ways in which race, caste and ethnicity operate in a variety of national, economic, demographic and cultural settings, notably Cuba, Brazil, South Africa, India, China, and the U.S. The course will include films, readings and slides obtained for a semester-at-sea voyage to those countries.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
HIST 1775 - ORIGINS OF CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
This course presents a historical-critical investigation of Christian origins. Special attention is paid to varieties of 1st century Hellenistic and Palestinian Judaism within the Greco-Roman world. Primary readings include selected Biblical passages and apocrypha, 1st century historians and philosophers (Josephus, Tacitus, Suetonius, and Philo), the New Testament corpus (including Paul and the Pastorals), and selected readings from the Dead Sea Scrolls. In addition there will be assignments from various modern New Testament critics, historians, and theologians.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1776 - VARIETIES OF EARLY CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
Through early Christian literature (such as non-canonical gospels and the writings of the Church Fathers) and various types of archaeological evidence, this course examines the many different and often competing forms of Christianity that developed in the first four centuries of the common era. Among the areas of examination are key theological issues, creedal formulation, Gnosticism, martyrdom, asceticism, Christian relations with pagans and Jews, and the battles over orthodoxy and heresy. We also assess the conversion of Constantine and the social and political implications of the Christianization of the Roman Empire.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1779 - JERUSALEM: HISTORY AND IMAGINATION

Minimum Credits: 3
Maximum Credits: 3
The holy city of Jerusalem is at the heart of the Western religious imagination and of contemporary political conflict in the Middle East. Traditionally it has been a center of religious pilgrimage, home to Israelite kings and Islamic caliphs. Today it is a cutting-edge urban center marked by stunning demographic diversity, a rapidly expanding economy, and an intractable political crisis. In this course, we will examine the history of the city—from its earliest days to today—with an eye toward its religious significance in Judaism, Christianity, and Islam. Special attention will be given to Jerusalem's changing urban fabric: its architecture, neighborhoods, natural resources, economy, and religious institutions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1780 - JEWS AND THE CITY

Minimum Credits: 3
Maximum Credits: 3
Comedian Lenny Bruce riffed in 1963 that "If you live in New York or any other big city, you are Jewish. It doesn't matter even if you're Catholic; if you live in New York you're Jewish." In this course, we will discover why Lenny Bruce -- and so many other observers of Jewish life -- came to understand urbanity as a core component of the Jewish experience. We will begin our study of the Jewish encounter with urban life in the 19th century, as millions of Eastern European Jews migrated from the small villages of their birth to cities across the globe. This course will trace this Eastern European Jewish diaspora to urban destinations around the world, before training its lens on the Jewish encounter with American cities. We will pay close attention to how patterns of Jewish urbanization changed regionally and over time; how urbanization affected Jews' home-life, leisure time, religious practices and occupational choices; how differences in gender and class affected Jews' experiences in urban spaces; and how Jews interacted with other ethnic groups in diverse, urban environments. Delving into the history, built environment, and archival sources pertaining to the Jewish experience in Pittsburgh will provide us with a dynamic case study for this crucial relationship between Jews and the city.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
HIST 1781 - ROMAN HISTORY

Minimum Credits: 3
Maximum Credits: 3
This course surveys the history of Rome from the earliest times through the late empire, with particular emphasis on political and social developments during the late republic and early empire.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1783 - GREEK HISTORY

Minimum Credits: 3
Maximum Credits: 3
This course surveys the history of ancient Greece, with special emphasis on political and social developments during the fifth century B.C.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1787 - CHRISTIAN-MUSLIM RELATIONS

Minimum Credits: 3
Maximum Credits: 3
This course surveys the historical interaction between Christian and Muslim communities over the past 1400 years and focuses on the art of polemic as an important tool in the human construction of religious concepts. We will begin by understanding the evolution of Islam in the Seventh Century, and continue with the encounters between Islam and the Byzantine Empire, and the medieval caliphate's encounters with the West, including the crusades. We will then consider specific elements of the interaction between Christian and Muslim communities, drawing from a variety of Muslim communities in Europe and the United States.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HIST 1790 - MEDITERRANEAN WORLD

Minimum Credits: 3
Maximum Credits: 3
With uniformity and diversity in the Mediterranean world as its overarching theme, this course examines the singularly important role of "the sea between the lands" from the fall of Rome to the present day. Concentrating on the lands and people of the Northern shore from Gibraltar to Anatolia, the focus alternates between thematic approaches to the Mediterranean region as a whole and specific attention to the sub-regional histories of Iberia, Italy, and the Balkans.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HIST 1794 - ISLAM, LAW, AND POLITICS

Minimum Credits: 3
Maximum Credits: 3
The emergence of modern Islamic political movements worldwide has had not only a profound impact on contemporary global geo-politics but has also triggered heated debates around the question of the compatibility of Islam with liberal democracy. This class investigates the "vexed" relation between Islam and politics, profoundly influenced by the experience of colonialism, and standing in complex relationship to concepts such as the modern nation-state, democracy, liberalism, or secularism. The class will combine empirically grounded studies the multiple facets of past and contemporary Muslim politics in Muslim-majority and minority contexts with a more theoretical investigation of modern Islamic political thought; here it will examine its intellectual origins, its arguments, the challenge it poses to its liberal counterparts, but also its conundrums and contradictions.
HIST 1796 - HISTORY OF AFRICA SINCE 1800

Minimum Credits: 3
Maximum Credits: 3
Surveys history of Africa from 1800 to the present day. Major themes include African statecraft, European colonization, African nationalism and postindependence problems. Processes of African institutional growth within the perspectives of resiliency, change and adaptation will be emphasized.

HIST 1900 - HISTORY INTERNSHIP

Minimum Credits: 1
Maximum Credits: 6
This course enables students to combine academic training and practical work experience related to the major.

HIST 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Individual project administered under the supervision of a faculty member.

HIST 1902 - WRITING: HISTORY HONORS SEMINAR

Minimum Credits: 3
Maximum Credits: 3
The content of the course will vary according to the faculty member teaching it. It will center on a theme involving historical writing/research, developing skills required for primary historical research. Students will complete a number of writing requirements. Attention will be directed towards style, structure, and issues of academic presentation, as well as historical content. Seminar forms a part of the departmental honors program.

HIST 1903 - HONORS THESIS/MAJORS

Minimum Credits: 1
Maximum Credits: 9
This course is only for students writing an honors thesis.

HIST 1904 - UNDERGRADUATE RESEARCH ASSISTANT

Minimum Credits: 1
Maximum Credits: 6
This course offers students the opportunity to participate in a research project, working as a research assistant under the guidance of a history professor. The aim of the course is to give the student training in historical research methods, and also to promote mentoring relationships between students and faculty. Subject to faculty approval more than one enrollment is possible.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

HIST 1905 - UNDERGRADUATE TEACHING EXPERIENCE

Minimum Credits: 1
Maximum Credits: 3
This course offers the opportunity for qualified third-and fourth-year students to assist in teaching history lecture course. Each student must have taken the course previously as a student (with a minimum grade of B) and will work under the direct supervision of the relevant history faculty member. Each student must receive permission of the instructor, complete a teaching agreement with that instructor, and get permission from one of the advisors in the department. Credits gained through this course may only be used toward the elective requirement of the history major.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

HPS 0410 - EINSTEIN: MODERN SCIENCE AND SURPRISES

Minimum Credits: 3
Maximum Credits: 3
Do astronauts age more slowly? Can a finite universe have no edge? Can time travel possible? Can time have a beginning? Does the moon change because a mouse looks at it? Surprisingly, modern science answers yes to all these questions. This course provides simple-to-understand explanations of these and other related questions, their broader philosophical significance and their histories. The course is suitable for students with no science background but with an interest in the world of modern science.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0427 - MYTH AND SCIENCE

Minimum Credits: 3
Maximum Credits: 3
The Greeks in the sixth to fourth century B.C. Initiated forms of thinking we have from then on called "scientific" and "philosophical". This course examines the question of how science is distinguished from "non-science" by studying the role of myth and science in ancient Greece. The aim is to understand what distinguishes the ideas of the first scientists and philosophers from those earlier beliefs called myth.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0430 - GALILEO AND CREATION OF MODERN SCIENCE

Minimum Credits: 3
Maximum Credits: 3
Galileo is the father of modern science. This course explores his revolutionary discoveries, his attack on Aristotle's natural philosophy, and his transformation of the notion of science, and his epoch-making clash with the religious authorities of the time.
Academic Career: Undergraduate
HPS 0437 - DARWINISM AND ITS CRITICS

Minimum Credits: 3
Maximum Credits: 3
Charles Darwin's ideas have had an enormous impact on biology and on culture generally. These ideas have been criticized within biology, by philosophers, social theorists and religious fundamentalists. This course studies the historical growth of Darwinism and the criticisms mentioned, and evaluates those criticisms and their impact on the theory.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0515 - MAGIC, MEDICINE AND SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course introduces students from all backgrounds to humanistic ecology, an interdisciplinary method of learning which combines the humanities with science. Humanistic ecology teaches how to integrate scientific research, philosophy, pedagogy, literature, and health in a holistic framework. Students will learn about classical forms of self-transformation, healing, and knowing that will help them find original pathways to knowledge and wellbeing.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0517 - THINKING ABOUT THE ENVIRONMENT

Minimum Credits: 3
Maximum Credits: 3
The goal of HPS 0517, thinking about the environment, is to promote clear and rigorous thinking about environmental issues such as nuclear power, global warming, acid rain, or the use of chemical pesticides. Deciding where to stand on such issues depends on being able to evaluate both scientific and philosophical arguments. We aim to help students develop the skills needed to find the best available information on an environmental issue, and to make informed judgments about what conclusions, and what actions, are warranted on the basis of that information.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0545 - SPACE-TIME-MATTER ANTIQU-20THC

Minimum Credits: 3
Maximum Credits: 3
This is an introductory course for students with either scientific or non-scientific backgrounds. It examines the development of the concepts of space, time and matter from the crucible of ancient Greece to the 17th century scientific revolution and foreshadows the revolutionary modifications of the 19th and 20th centuries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0605 - THE NATURE OF THE EMOTIONS

Minimum Credits: 3
Maximum Credits: 3
This course will examine selected historically important theories and portrayals of the human emotions and passions.
HPS 0608 - PHILOSOPHY AND SCIENCE

Minimum Credits: 3
Maximum Credits: 3
An introductory course in philosophy of science

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0609 - PHILOSOPHY AND SCIENCE/WRITING PRACTICUM

Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course 'philosophy and science'

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

HPS 0610 - CAUSAL REASONING

Minimum Credits: 3
Maximum Credits: 3
Do school vouchers really help inner city students become better educated? Do gun control laws really make society safer? This course examines how scientists reason about causal claims like these. It considers use of scientific statistical data that informs our public policy debates. The course uses an interactive, web-based text and exams. In addition, there is an on-line virtual "causality lab" in which students will set up, run, and then analyze simulated experiments. They will construct causal theories, use the lab to derive predictions from these theories, and then test the predictions against the simulated data. While course materials are delivered on-line.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0611 - PRINCIPLES OF SCIENTIFIC REASONING

Minimum Credits: 3
Maximum Credits: 3
This course will provide students with the skills to understand and assess scientific claims that confront them in daily life. Special attention will be given to reasoning based on samples, evaluating hypotheses and causal claims, as well as common mistakes in scientific reasoning.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 0612 - MIND AND MEDICINE

Minimum Credits: 3
Maximum Credits: 3
Mind and medicine deals with fundamental problems and questions that arise in considering the nature of mental health, mental illness, and branches of medicine that aim to promote mental health and treat mental illness. We will begin by considering the concepts of 'health', 'disease' and 'illness' in general, and several different models of medicine. From there we will move on to a consideration of the nature of explanation in medicine generally. We will examine some explanatory successes in the domain of physical health and disease, and consider how those successes were achieved. In the second half of the course we will look at controversies over the question of whether there is such a thing as mental illness, and if so, how one is to
define, diagnose and treat it. In order to better understand what is at stake, we will explore these controversies by focusing on a specific mental illness, schizophrenia. Looking at recent research on schizophrenia will allow us to see the extent to which the kind of understanding we have achieved in physical medicine is or is not to be expected with serious mental illness. Students who successfully complete this course will be able to identify and analyze different philosophical approaches to selected issues in medicine and psychiatry; have gained insight into how to read and critically interpret philosophical arguments; and have developed skills that will enable them to think clearly about foundational questions as future or current health care providers, policy makers, and consumers. This course is also part of a core sequence leading to certification in the Conceptual Foundations of Medicine Certificate Program, and is a companion course to HPS 0613 (Morality and Medicine) but may be taken independently. The course is of particular interest to pre-medical and pre-health care students.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HPS 0613 - MORALITY AND MEDICINE

- **Minimum Credits:** 3  
- **Maximum Credits:** 3

Ethical dilemmas in the practice of health care continue to proliferate and receive increasing attention from members of the health care profession, ethicists, policy makers, and the general public as health care consumers. In this course we will examine a number of ethical issues that arise in the context of contemporary medical practice and research by analyzing articles and decision scenarios. Topics to be covered typically include the physician-patient relationship; informed consent; medical experimentation; termination of treatment; genetics; reproductive technologies; euthanasia; resource allocation; and health care reform. Students who successfully complete this course will be able to identify and analyze different philosophical approaches to selected issues in medical ethics; have gained insight into how to read and critically interpret philosophical arguments; and have developed skills that will enable them to think clearly about ethical questions as future or current health care providers, policy makers, and consumers. This course is part of a core sequence leading to Certification in the Conceptual Foundations of Medicine Certificate Program, and is a companion course to HPS 0612 (Mind and Medicine) but may be taken independently. The course is of particular interest to pre-medical and pre-health care students.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HPS 0616 - ARTIFICIAL INTELLIGENCE AND PHILOSOPHY OF SCIENCE

- **Minimum Credits:** 3  
- **Maximum Credits:** 3

Artificial intelligence has been and still is one of the core disciplines of contemporary cognitive science. It raises fascinating questions: can robots think? Is artificial intelligence really intelligence? Could artifacts be conscious? What can we learn about the human mind from building robots? How should intelligent robots be built? We will survey the main controversies that artificial intelligence has provoked.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HPS 0620 - SCIENCE AND RELIGION

- **Minimum Credits:** 3  
- **Maximum Credits:** 3

Are science and religion at odds or harmonizable? Do they coincide or represent completely separate discourses? This course examines the relationship between science, rationality, faith, and religion. Special attention will be given to ancient creation narratives and their interpretation, historical dialogues regarding faith and reason in the Western monotheist faiths (Christianity, Judaism, Islam), the scientific revolution, and various approaches to evolutionary theory. We will also consider practical, contemporary issues such as neuroscience and religious practice, ecology and faith, and scientific views toward gender and race.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

1819
HPS 0621 - PROBLEM SOLVING: HOW SCIENCE WORKS

Minimum Credits: 3  
Maximum Credits: 3  
This course provides a gentle introduction to quantitative methods in science, showing how these methods are designed to control our natural tendencies to misread nature. It uses the examples of the science of energy and statistics.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HPS 0623 - EXPLANATIONS OF HUMANS AND SOCIETY

Minimum Credits: 3  
Maximum Credits: 3  
This course will look at some of the original writings of the three "giants" of modern psychology: Freud, Skinner and Piaget. The three movements of psychoanalysis, behaviorism and developmental cognition will be explored through their most articulate and well known proponents. Topics to be discussed include the nature of the emotions, the structures of behavior and the forms of human thought. Specifically, we will discuss how the concepts of desire, love, jealousy, homosexuality, skilled actions, language, and logical and moral reasoning can be used to understand human beings.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HPS 0626 - DEVELOPMENT OF MODERN BIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course will consider major episodes in the history of biology in the 19th and 20th centuries. Beginning with the Charles Darwin's theory of evolution and ending with contemporary genomics, we will place the major milestones of modern biology in their wider social, political, and cultural context. Topics may include Darwinism and its controversial reception, eugenics and the control of heredity, experimentation as a hallmark of twentieth century biology, the impact of molecular biology, and the rise of genomics and big data in biology.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HPS 0630 - SCIENCE AND PSEUDOSCIENCE

Minimum Credits: 3  
Maximum Credits: 3  
This course probes the distinction between genuine and pseudo-science using a number of case studies, including ESP and other paranormal phenomena, scientific creationism, UFO's and extraterrestrial life, etc.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HPS 0633 - SCIENCE, PHILOSOPHY AND PUBLIC POLICY

Minimum Credits: 3  
Maximum Credits: 3  
The course studies problems that arise in making public policy decisions. Topics studied include the nature of science, the nature of technology, our system of values, relations between science, values, and technology. Case studies include teaching creation science in public schools, genetic engineering, legislating sexual morality, and other policy issues on which scientific knowledge has some bearing.  
Academic Career: Undergraduate
HPS 0685 - MATHEMATICS AND CULTURE

Minimum Credits: 3  
Maximum Credits: 3  
This course provides an introduction to the role of mathematical ideas in various cultural settings. It focuses on the use of math in everyday life.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HPS 0700 - HISTORY AND PHILOSOPHY OF MUSICAL SCIENCE

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HPS 1501 - ANCIENT SCIENTIFIC ASTRONOMY

Minimum Credits: 3  
Maximum Credits: 3  
In this course we examine Babylonian and Greek mathematical astronomy and the relationship to Greek and near eastern religions and cosmologies. Transmission to other cultures will be noted.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: LVL: So, Jr, or Sr

HPS 1508 - CLASSICS IN HISTORY OF SCIENCE

Minimum Credits: 3  
Maximum Credits: 3  
Four hundred years ago Galileo Galilei aimed a telescope at the sky. He revolutionized astronomy. Equally revolutionary were his theories and experiments in physics, published in his masterpiece two new sciences. In this course we will learn why Galileo's theories and experiments in physics were revolutionary. We will read Galileo's two new sciences, setting it in the context of the history and philosophy of Western science and civilization.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: LVL: So, Jr, or Sr

HPS 1530 - EUROPEAN INTELLECTUAL HISTORY 2 1870-1940

Minimum Credits: 3  
Maximum Credits: 3  
A course of readings and discussions focused on major texts in the European intellectual tradition from the age of positivism to the second World War. There will be occasional lectures, especially on the social and institutional contexts, but the predominant emphasis will be on class discussions of primary readings.  
Academic Career: Undergraduate  
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

HPS 1531 - MAN AND COSMOS IN THE RENAISSANCE

Minimum Credits: 3
Maximum Credits: 3
An exploration of the intellectual and scientific activity of the European Renaissance and its influence in shaping modern man and the discoveries of modern science.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

HPS 1600 - PHILOSOPHY & RISE MODERN SCIENCE

Minimum Credits: 3
Maximum Credits: 3
It is generally agreed that what happened in the 17th century changed the human landscape irrevocably. The religious reformation was consolidated; divinely ordained kingship was decisively uprooted; upheavals across Europe ushered in non-traditional political and constitutional formations; and the forces of transformation forged new sociocultural contexts in which life was lived. Lying at the core of these transformations was the impact of early modern science as it emerged in the 17th century. This course will examine the dynamics of the 'scientific revolution' paying close attention to such figures as Kepler, Galileo, Descartes, Hobbes, Leibniz, and Newton. We will be concerned with the philosophical consequences of their thought within the context of their period, but also with the affect it had on the scientific world-picture of the 18th century enlightenment
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

HPS 1602 - RACE: HISTORY, BIOLOGY, PSYCHOLOGY, PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
The goal of this course is to help students gain a thorough understanding of the issues raised by races and racism. Such understanding can only be gained by bringing together several disciplines in an interdisciplinary manner. Thus, we will examine issues about race and racism that arise from biology, history, philosophy, and psychology. In particular, we will examine the following questions: Does genetics show that races are real? Why are racial categories used in medicine? Where does the concept of race come from? Is it a recent historical invention? How has it influenced the sciences? What are races? What is racism? Should we be color-blind? How does race contribute to one's identity? Why do we think about races? Are there differences in intelligence between races? What are racial prejudices? The course will involve reading original articles and book extracts from a range of disciplines, including history, philosophy, and several sciences. These articles will be explained and discussed in class.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 1605 - AESTHETICS AND SCIENCE

Minimum Credits: 3
Maximum Credits: 3
How does one appreciate painting, literature or music? Is knowing about art useful or, even, necessary? Is beauty in the eye of the beholder? The course deals with psychological and social science attempts to explain human responses to art. Also the question of how art is like and unlike science will be discussed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

**HPS 1612 - PHIL OF 20TH CENTURY PHYSICS**

Minimum Credits: 3
Maximum Credits: 3
An examination of the fascinating philosophical problems to which modern physical theories have given rise. No previous formal training in physics or mathematics will be presupposed, since the basic physical ideas needed will be introduced largely qualitatively with an emphasis on concepts rather than equations. Topics will vary from year to year with instructor, but center around classical mechanics, quantum mechanics, and relativity theory.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

**HPS 1616 - ARTFCL INTELGNC & PHIL OF SCI**

Minimum Credits: 3
Maximum Credits: 3
This course investigates the problem of mechanizing reasoning. For the case of deductive inference, it draws on work in symbolic logic and computation theory. For the case of inductive inference, it draws on work in confirmation theory from philosophy of science and learning theory.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

**HPS 1620 - PHILOSOPHY OF BIOLOGY**

Minimum Credits: 3
Maximum Credits: 3
 Philosophy of biology will consider foundational conceptual issues in biology like the nature and structure of biological explanation, the possibility of laws in evolutionary theory, the relationship between different causal components of biological processes (genetics and development), the problem of species reality and classification, the explanatory character of ascription of biological function, and the extension of biological explanations to human psychology and culture.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

**HPS 1623 - DEATH AND HEALTHCARE PROFESSIONS**

Minimum Credits: 3
Maximum Credits: 3
The American culture of the 20th and 21st centuries has been called, not death-defying, but death-denying. It is often said that America is the only place in the world that treats death as optional. Once upon a time, we couldn't have open, public conversations about breast cancer, because the word could not be uttered aloud. In many places, it is just as hard today to have an open, public conversation about death and dying. This phenomenon is not just a social more; it affects the practice of many professions and entire segments of our economy and society. This course will explore our individual and cultural reactions to mortality, the ways in which dying in today's America is different from dying throughout history or elsewhere in the world, and the responses of a variety of professions, both within the field of healthcare and beyond, to their encounters with people in the various stages of dying. Students will be asked, at turns, to be scientific, philosophical, clinical, analytical, and emotional in encountering the concepts and material presented here. This should be a true interdisciplinary experience.

Academic Career: Undergraduate
HPS 1625 - PHILOSOPHY OF MEDICINE

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to philosophical and yet practical issues in medical science. Students will examine the concepts of "health", "normality", and "disease", and also some representative theories in clinical biochemistry, microbiology and physiology.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: LVL: So, Jr, or Sr

HPS 1626 - NEUROETHICS

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to ethical, social, and philosophical issues in the neurosciences and brain research. As the American Medical Association has noted, "The rapidly evolving field of neuroethics ethical issues involving neurologic and psychiatric conditions" is concerned with the great promise of newer technologies as well as the ethical questions that they will pose about autonomy, privacy, the definition of "normal" and the nature of individuality. The topics to be covered include (1) neurological and brain enhancement, (2) ethical and policy issues related to neuroimaging, (3) mind control and "mindreading", (4) free will and responsibility, (5) criminal culpability and "dangerous brains", and (6) neurodevelopment and the emergence of personhood and the self. There are no prerequisites for this course.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HPS 1627 - LIVING WITH TECHNOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
Examination of the role of technology in the modern world. What are the cultural and psychological implications of technology? What are its limits, its dangers, its promises? What do concerned citizens need to know about technology to be responsible?  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: LVL: So, Jr, or Sr

HPS 1630 - MUSIC, CULTURE AND TECHNOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
In this course, we will explore the history of sound reproduction technology from the end of the nineteenth century into the present day, analyzing the way sonic technologies have shaped the creation, consumption, and social politics of music in North America. This is not a course about how to make sonic technology, or how to use it; instead, it engages with sound reproduction technology as a social, historical, and cultural artifact. Although the course is roughly chronological, it is not comprehensive the purpose is not to learn a single, continuous history of audio technology. We will be exploring various perspectives from more than a century of historical and technological change, moving from the use of sound in 19th-century laboratories to the culture of the iPod. By thinking critically about technology's broader social and intellectual contexts, this class sheds light on the historical and material stakes of sonic technology for listeners in the 21st Century.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade
HPS 1640 - SCIENCE, PHILOSOPHY AND THE SENSES

Minimum Credits: 3
Maximum Credits: 3
Our senses are our only means of obtaining knowledge of the world around us. For this reason, they have long been a subject of philosophical
enquiry, concerned with the nature of perceptual knowledge. Alongside philosophical investigation, the perceptual modalities (vision, hearing, etc.)
Are a central area of experimental research in psychology and neuroscience? Philosophers of perception now seek to integrate their conceptual
understanding of the topic with empirical results coming from these sciences. In this course, we will examine debates in contemporary philosophy of
perception over the nature of perceptual awareness and sensory knowledge, looking especially at ideas that have been influenced by scientific
discoveries. Topics include: nave realism and representationalism; ontology of perceptible qualities (the existence of colour, sound, smell, etc.); the
nature of attention and introspection.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HPS 1653 - INTRO TO PHILOSOPHY OF SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course provides a broad, introductory survey of current issues in philosophy of science and treats philosophical problems such as confirmation,
which are common to all sciences, as well as problems peculiar to individual sciences.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

HPS 1660 - PARADOX

Minimum Credits: 3
Maximum Credits: 3
This course explores paradoxes both for the fun of untangling an intriguing puzzle and for the more serious reason of the easy access they provide to
some of the most important foundations issues in philosophy and the sciences.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr

HPS 1670 - PHILOSOPHY OF NEUROSCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course will serve as an introduction to the conceptual problems around neuroscience for students with and without a background in experimental
neuroscience.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HPS 1682 - FREEDOM AND DETERMINISM

Minimum Credits: 3
Maximum Credits: 3
This course analyzes three concepts of determinism—theological determinism, logical determinism or fatalism, and physical determinism—and
examines the various philosophical arguments designed either to show that determinism and free will do clash or alternatively that they are
reconcilable.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: LVL: Jr, So, or Sr

HPS 1690 - TOPICS IN PHILOSOPHY OF SCIENCE

Minimum Credits: 3  
Maximum Credits: 3  
Discussion, at the advanced undergraduate level, of selected problems such as confirmation, concept formation, the nature of theories. In any given term, the course might focus on problems in physical, biological, or social sciences.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: LVL: Jr, So, or Sr; PLAN: History and Phil of Science (BA)

HPS 1702 - JR/SR SEMINAR FOR HPS MAJORS

Minimum Credits: 3  
Maximum Credits: 3  
The goal of this seminar (HPS 1702) will be to introduce you to the cutting-edge research in history and philosophy of science. The seminar is designed to complement the knowledge you have acquired about the classic debates in history and philosophy of science. We will focus on the recent debates in contemporary philosophy of science and on some debates in the history of science that are relevant for philosophy. We will read articles that have been published in the last ten years in the major philosophy of science and history of science journals. We will also read some classic papers that provide a background for the current debates.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (HPS 0427 or 0430 or 0515) and (HPS 0611 or PHIL 0500) and HPS 1653; CREQ: HPS 1703; LVL: Jr or Sr; PLAN: History and Philosophy of Science (BA)

HPS 1703 - WRITING WORKSHOP FOR HPS MAJORS

Minimum Credits: 1  
Maximum Credits: 1  
This writing workshop is designed to introduce HPS majors to the methods and standards of good scholarly writing in history and philosophy of science. It will be offered to HPS majors only in conjunction with HPS 1702, Jr./Sr. seminar. Evaluation will be based on two short papers that will be rewritten on the basis of the instructor's comments. Must be an HPS major in junior or senior year.

Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: Satisfactory/No Credit  
Course Requirements: PREQ: (HPS 0427 or 0430 or 0515) and (HPS 0611 or PHIL 0500) and HPS 1653; CREQ: HPS 1702; LVL: Jr or Sr; PLAN: History and Philosophy of Science (BA)

HPS 1901 - INDEPENDENT STUDY

Minimum Credits: 1  
Maximum Credits: 6  
This is an opportunity for a student and instructor to determine a topic in history and/or philosophy of science which is of special interest.

Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis  
Course Requirements: LVL: So, Jr, or Sr; PLAN: History and Philosophy of Science (BA)
HAA 0010 - INTRODUCTION TO WORLD ART

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the question `what is art through a close analysis of select art works from around the globe, introducing students to the types of questions art historians bring to the images, objects and sites human beings have taken particular care to craft and conceptualize. What role has art played in a diverse range of human cultures across time?  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 0011 - INTRODUCTION TO ART/WRITING PRACTICUM

Minimum Credits: 1  
Maximum Credits: 1  
Students enroll in HAA 0010 and may add this section and earn an additional one credit. It is taken in addition to the regular recitation and provides an opportunity to complete an A&S writing requirement.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

HAA 0018 - DEATH IN THE ANCIENT WORLD

Minimum Credits: 3  
Maximum Credits: 3  
The death of a loved one is an emotional and powerful occurrence that provokes a variety of human responses. In addition to writings describing their funerary practices, the civilizations of the ancient Mediterranean region have left artistic representations of death and dying, built tombs, and objects associated with funerary rituals. The study of these texts, images, structures, and objects allows us to better understand ancient attitudes and reactions to death. This undergraduate lecture focuses on the visual and material evidence of funerary practices and beliefs in ancient Egyptian, Greek, and Roman societies. The subject will be approached thematically. First, we will explore how archaeologists discover death-related artifacts and how scholars approach the study and reconstruction of ancient death rituals. Ancient practices and beliefs regarding the mummification, the funeral, commemorative strategies, visits to the grave, and the afterlife will be explored, and images found on specific media (vases, sculpture, built tombs, paintings) will be discussed in depth. The course will conclude with discussions of the roles that sensational topics, like fear of the undead (zombies, vampires, and ghosts) and spectacles of death (gladiatorial contests and public executions), played in ancient Mediterranean civilizations.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 0020 - INTRODUCTION TO ASIAN ART

Minimum Credits: 3  
Maximum Credits: 3  
This base level survey is meant, on the one hand, to introduce the student to the arts of Japan, China, and India and on the other, to teach some fundamental techniques of visual analysis. The course considers the development of Chinese bronzes, Chinese Buddhist sculpture, Indian Hindu and Buddhist sculptures, and Japanese temples, sculptures, and paintings.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 0030 - INTRODUCTION TO MODERN ART

Minimum Credits: 3  
Maximum Credits: 3  
The course will present a chronological survey of Western European, Russian, and American art from the mid-nineteenth century to the present
(impressionism to post-modernism). In addition to charting the dramatic stylistic and conceptual changes in art during this time period, the course will consider the historical circumstances which caused a disintegration in accepted notions of what constituted a significant work of art.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0033 - INTRODUCTION TO MODERN ART/WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Students enroll in HAA 0030 and may add this section and earn an additional one credit. It is taken in addition to the regular recitation and provides an opportunity to complete an A&S writing requirement.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

HAA 0040 - INTRODUCTION TO WESTERN ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
Introduces students to the conscious observation and analysis of architecture and to a broad survey of the major masterpieces of architecture in Western civilization. Formative concepts behind the designs, structural principles involved in the construction, and societal values promoted and reinforced by the formal character of buildings will be considered along with the analysis of style. Required for the architectural studies major and recommended as a beginning course for others interested in architecture.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0050 - INTRODUCTION TO MEDIEVAL ART

Minimum Credits: 3
Maximum Credits: 3
A survey of the architecture, painting, sculpture and minor arts of the medieval world from ca. 300 To ca. 1450 With the emphasis on visual analysis of period styles.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0060 - MASTRPIECES OF WESTERN PAINTNG

Minimum Credits: 3
Maximum Credits: 3
This course will help students with no experience in the arts feel comfortable when they visit a museum or discuss paintings, upon completing this course a student should not only have an easy familiarity with some of the greatest masterpieces of European and American painting, but he or she should also have attained the background and skill to understand and to discuss paintings they might discover in a gallery, antique shop or home. This course is especially intended for students without background in the arts.

Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0061 - INTRODUCTION TO PAINTINGS

Minimum Credits: 3
Maximum Credits: 3
This course will help students with no experience in the arts feel comfortable when they visit a museum or discuss paintings. Upon completion of this course a student should not only have an easy familiarity with some of the greatest masterpieces of painting, but he or she should also have attained the background and skill to understand and to discuss paintings they might discover, in a gallery, antique shop or home. This course is especially intended for students without a background in the arts.

Academic Career: UGRD  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 0070 - ART OF EUROPE

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to European art and architecture from the early Renaissance to the present. The course will also include American works from the 18th century onwards.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 0090 - INTRODUCTION TO CONTEMPORARY ART

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the latest developments in contemporary art in the context of changes in world visual cultures since the 1960s. The first weeks will concentrate on the transformations of artistic practice that occurred initially in pop art, and on the minimal-conceptual shift in Western art. This will be followed by a survey of the diversification of artistic practice in the 1980s and 1990s, including the emergence of new internationalisms reflecting postcoloniality, global contemporary art and digital media.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 0100 - SPECIAL TOPICS-ANCIENT

Minimum Credits: 3  
Maximum Credits: 3  
Special topics in ancient art.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 0101 - FOUNDATIONS OF ART HISTORY

Minimum Credits: 3  
Maximum Credits: 3  
Foundations of Art History is a core course for the HAA major and offers an introduction to the history of the art historical discipline and its research and interpretive methods.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

HAA 0102 - PROSEMINAR FOR UNDERGRADUATE MAJORS

Minimum Credits: 1  
Maximum Credits: 1  
This is professional development workshop that assists students with resume development, networking, and establishing and meeting career goals.
HAA 0105 - ART AND EMPIRE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HAA 0110 - SPECIAL TOPICS - ART HISTORY

Minimum Credits: 1
Maximum Credits: 1
This is a special 1 credit lecture section attached to a regular HAA course that is designated specifically for an honors course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0150 - ANCIENT ART

Minimum Credits: 3
Maximum Credits: 3
The Mediterranean Sea is a lake and its shores have produced many important cultures and artistic traditions. The course will survey the artistic and cultural traditions of Mesopotamia, Egypt, and the Aegean, from the Neolithic to the end of the Bronze Age (ca. 6000-1200 BCE), a formative period for the cultures that developed in these regions. Special attention will be paid to: 1) the relationship between the artistic traditions of these areas and the societies which produced them, and 2) the way in which influences from one culture were transformed by another.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0160 - ANCIENT EMPIRES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0165 - GODS AND KINGS: ART IN ANCIENT MESOPOTAMIA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0210 - MEDIEVAL PAINTING

Minimum Credits: 3
Maximum Credits: 3
This course introduces the history of medieval painting. It begins with the ways in which the institution of the Christian church fashioned a new pictorial vocabulary out of classical and Jewish antecedents, in terms of form, techniques and subject matter. It follows the evolution of painting during the early Christian, Hiberno-Saxon, Byzantine, Carolingian, Romanesque and Gothic periods in the media of fresco, mosaic and book illumination, culminating with the triumph of oil painting in Flanders in the 15th century.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HAA 0220 - THE MEDIEVAL BOOK

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC Elective Basis

### HAA 0221 - MEDIEVAL ARCHITECTURE

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This course will treat the development of architecture in Europe from about AD 300 to 1500. It will focus primarily upon the building designed to serve Christian culture, especially churches. Lectures will include the social and political background as well as the liturgical, archaeological and aesthetic aspects of the great monuments.  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC Elective Basis

### HAA 0240 - THE MEDIEVAL PATRON

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- This is a survey of medieval art focusing on the major ecclesiastical and secular patrons of the period. The works of art and architecture are studied in relation to contemporary writings - chronicles, inventories, descriptions that provide documentary evidence for their creation and appreciation. Specific patrons include Justinian, Charlemagne, the Cluniac order, Henry the Lion, Jean de Berry.  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC Elective Basis

### HAA 0302 - RENAISSANCE ART

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- We will explore the arts - painting, sculpture, architecture, and the decorative arts - that flourished in Italy between 1250 and 1590. The renaissance is one of the great epochs of western culture; this course offers an introduction to the visual evidence that reveals the development of new attitudes about human life and its meaning. Emphasis will be on works of those revolutionary individuals who transformed the arts - Giotto, Donatello, Brunelleschi, Michelangelo, Leonardo, Raphael, Bellini, titian, and Palladio, to name only the most important.  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** LG/SNC Elective Basis

### HAA 0303 - LANDSCAPE PAINTING, 1500-1700

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

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1831
This course will study the history of landscape painting in the centuries when it finally emerged as a recognized genre capable of artistic achievements as great as those hitherto reserved for history painters. The cultural context from which landscape painting emerged in Antwerp, Regensburg, and Venice in the early 16th century, its early Renaissance precedents, its ambiguous status in Renaissance art theory will be examined. The role of Patenir, Giorgione, Altdorfer, Titian, Elsheimer, Rubens, Jan van Goyen, Ruisdael, Claude and Poussin will be emphasized.

**Academic Career:** UGRD  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 0310 - NORTHERN RENAISSANCE ART**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This class will feature art produced in Northern Europe during the Renaissance period.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 0320 - SPECIAL TOPICS-NORTHERN EUROPEAN**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Special topics in European art.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 0350 - BAROQUE ART**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course will consider the careers of the major painters and sculptors of Italy (Caravaggio, the Carracci, Bernini, Cortona, Gauilli), Spain (Ribera, Zurbaran, Velazquez, Montanes, Murillo), France (G. De la Tour, P. De Champaigne, Poussin, Claude, le Brun, Puget), Flanders (Rubens, van Dyck, Jordaens) and Holland (Hals, Rembrandt, Vermeer, Ruisdael) in the 17thC. It will also consider definitions of the term "baroque" in relation to the history of taste and later responses to 17thC artistic achievement.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 0370 - REMBRANDT**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This core level art history course, intended for a beginning student with no background in art history (but also open to devotees and majors), offers an introduction to Rembrandt by an intensive examination of his life, and his art; paintings, drawings, and etchings. The course is arranged chronologically, so that as the term proceeds we follow Rembrandt from his earliest training and his fascination with baroque dynamism through his greatest success as Amsterdam's most popular portraitist to his moving and universal final works.

**Academic Career:** UGRD  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 0380 - ART OF THE SPANISH WORLD: RELIGION, IDENTITY & THE ART OF ACCOMMODATION**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3
HAA 0402 - WOMEN ARTISTS, 1550-1800

Minimum Credits: 3
Maximum Credits: 3
This course will focus on women artists from the late renaissance, when they first emerged and achieved some success, to the present. The social context in which women artists functioned and the roles played by the most successful women of each century in opening opportunities for the succeeding generation will be considered. Sofonisba Anguissola, Artemisia Gentileschi, Elisabetta Sirani, Judith Leyster, Rachel Ruysch, Rosalba Carriera, Angelica Kauffman, e\'e\'e. Vigee Lebrun, Rosa Bonheur, Mary Cassatt, Berthe Morisot and many 20thC women artists will be covered.

Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0420 - VAN GOGH

Minimum Credits: 3
Maximum Credits: 3
This introductory course will study one major artist as a means of approaching the methodology of art history. The major periods of his career will be presented in the context of European art of the nineteenth century, particularly impressionism and post-impressionism.

Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0425 - DIGITAL HUMANITY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0440 - FRANK LLOYD WRIGHT

Minimum Credits: 3
Maximum Credits: 3
This course will deal with the life of the man who was America's greatest architect and one of the principal world figures in the art of building in the Twentieth Century. The lectures will treat his formation as an architect as well as the development of his career and will focus upon a theoretical analysis of wright's work in comparison with that of his great contemporaries.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0460 - ART IN PUBLIC: INCLUSION, IDENTITY, AND ACTIVISM

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the social, political, and artistic issues surrounding the creation and interpretation of public monuments and public art. We will focus on our local urban environment, particularly the rich collection of works in and around Oakland, but we will also put these local works in larger national and global contexts. The course emphasizes hands-on learning, through multiple site visits, encounters with the works of art in their real urban contexts, and individual and group exercises building on these encounters.

Academic Career: Undergraduate
HAA 0470 - PHOTOGRAPHY AND ART

Minimum Credits: 3
Maximum Credits: 3
This introductory course is intended to provide a thorough familiarity with the history of photography from its development in the 19th century to the present day, and to link that history to major trends in the history of modern art, such as realism, impressionism, cubism, surrealism, abstract art, etc.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0480 - MODERN ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
The development of architecture in Europe and America from around 1800 to the present, involving a number of revolutionary changes; the appearance of many new building types, the availability of new materials produced by industry, the transformation of structural design by technology, and the emergence of strikingly new ideas about how a building should be conceived.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0501 - AMERICAN ART

Minimum Credits: 3
Maximum Credits: 3
This course will introduce students to American painting, sculpture, and architecture, with an emphasis on painting, from the colonial period to the post-World War II era. Students will also learn the vocabulary of visual analysis and become familiar with the scope of art historical methodology. Students should leave the class with a broad understanding of the contexts in which American artists worked, a fund of information about artists and monuments of art in the American heritage, skills in visual analysis, and the capability to focus several types of critical questions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0502 - SPECIAL TOPICS: LATIN AMERICAN ART

Minimum Credits: 3
Maximum Credits: 3
Special topics in Latin American art.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0510 - PITTSBURGH ARCHITECT/URBANISM

Minimum Credits: 3
Maximum Credits: 3
The course studies the physical environment of Pittsburgh; the topography, early settlement, the expansion of its industrial center, the post-war renewal, and the current shift from production to a service-based economy. A parallel study in the architectural history of Pittsburgh focuses on images of individual buildings from fort Pitt to the new skyscrapers. Student papers will integrate an analysis of a Pittsburgh building with an analysis of the neighborhood around it.
Academic Career: UGRD
HAA 0520 - ART AND POLITICS IN MODERN LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
This course examines artistic developments in modern Latin America in relation to broader political forces. Latin America offers rich opportunities to study cases of artists and architects who worked in the service of governmental regimes during the twentieth century, such as Diego Rivera in Mexico and Oscar Niemeyer in Brazil. At the same time, we will consider historical moments in which artists employed their artworks to challenge or subvert political repression, as occurred in Ecuador in the 1930s and in Chile during the dictatorship of Augusto Pinochet. Beyond politics, this course focuses on the tensions indigenous vs. cosmopolitan, urban vs. rural, rich vs. poor, and the international dialogues that have informed the production and reception of art and architecture in Latin America from the age of independence to the present day.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0620 - ART OF CHINA

Minimum Credits: 3
Maximum Credits: 3
One way of learning about the cultural history of China is to look at the visual arts produced there. This course offers a chance to examine both traditional and modern expressions. Such topics as Neolithic pottery, bronze art of the first dynastic period (Shang and Chou), tomb sculpture and burial practices, Buddhism and the state, landscape painting and attitudes toward nature, poster art and crafts in new China will be discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0640 - ART OF JAPAN

Minimum Credits: 3
Maximum Credits: 3
This course introduces the visual arts of Japan, prehistory to the 19th century, focusing on selected works of painting, sculpture, architecture, and gardens under the broader themes of patronage, Buddhist worship and practice, and function.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0690 - CHINA: LANDSCAPE PAINTING & NATURE

Minimum Credits: 3
Maximum Credits: 3
The famous Chinese landscape painter named Kuo Hsi of the Song Dynasty (960-1126) asked, "Why the virtuous man takes delight in landscapes?" He reasoned that contemplation of a painting of landscape could refresh the mind and heart in as compelling a fashion as wandering among the mountains themselves. The Chinese landscape painter who in his pictures satisfies this longing depicts not merely the outward and visible forms of nature, but the inner life and harmony that pervade them. This course attempts to discover the sources of the symbolic language.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0730 - ISLAMIC ART

Minimum Credits: 3
Maximum Credits: 3
This course will study the development of the art and architecture which came to be associated with the territories ruled by Muslims, from the origins in the seventh century A.D. To the eighteenth century. The mosque, the Islamic book, the arts of the princely life (carpets, metalwork, textiles), Islamic Spain, and the impact of Islamic art on the West are among the topics surveyed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0810 - EXPERIMENTAL CINEMA

Minimum Credits: 3
Maximum Credits: 3
This course examines the development of experimental cinema beginning in Europe in the 1920s with dada and surrealist films by Marcel Duchamp, Luis Bunuel and others, and continuing in the U.S. and elsewhere after World War II. The films, many of which are non-narrative and some of which are "abstract", will be examined for the ways in which cinema is used for the filmmakers' personal expression. Consideration will be given to the artistic and cultural contexts in which the films were made, and comparisons will be made with other media, especially painting and sculpture.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0900 - SPECIAL TOPICS-ARCHITECTURAL STUDIES

Minimum Credits: 3
Maximum Credits: 3
Special topics in architectural studies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0905 - ARCHITECTURE OF THE PRE-MODERN WORLD: A GLOBAL PERSPECTIVE ON BODIES, BUILDINGS, AND IMAGINATIONS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 0940 - APPROACHES TO THE BUILT ENVIRONMENT

Minimum Credits: 3
Maximum Credits: 3
This foundational course for architectural studies majors seeks to acquaint students with contemporary ideas that affect our understanding of the built environment across the globe through a series of units dealing with different architectural issues and building types. The course engages in intensive reading of canonical texts in the field and current studies of issues shaping the built environment today.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1000 - SPECIAL TOPICS: ART HISTORY 1

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**HAA 1001 - SPECIAL TOPIC: ART HISTORY**

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**HAA 1009 - RESEARCH SEMINAR**

Minimum Credits: 3
Maximum Credits: 3
This course was developed to expand the capstone research experience of undergraduate students in the History of Art and Architecture department. It is conceived as a supplement to HAA 1010: approaches to art history, which is the official writing seminar required of all HAA majors. It provides faculty with the opportunity to teach one of their topics courses or a newly developed course to fewer students in a given semester, and mentor these students through a more significant research experience than is typically possible in a regular lecture-based class.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**HAA 1010 - APPROACHES TO ART HISTORY**

Minimum Credits: 3
Maximum Credits: 3
HAA 1010 is the capstone research seminar required of all HAA majors and is an official w-course. Students in this class will conduct extensive readings on a special topic devised by the course instructor. Each student in the class will be required to produce a substantive research paper under the guidance of the instructor. Students will work to master the skills that are fundamental to the discipline and broader arts related professions: critical thinking, research, and written and oral communication.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: History of Arts and Architecture (BA) or Architectural Studies (BA)

**HAA 1020 - MUSEUM STUDIES EXHIBITION SEMINAR**

Minimum Credits: 4
Maximum Credits: 4
This course teaches museum practice through practical experience with the permanent collection and with special exhibitions. Students will help in all aspects of exhibitions, from writing labels and/or catalogue copy, deciding how to best display the works, participating in the actual installation of exhibitions and planning related events such as tours.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

**HAA 1021 - INSIDE THE CARNEGIE MUSEUMS**

Minimum Credits: 3
Maximum Credits: 3
Inside the Carnegie Museums of Pittsburgh is a behind-the-scenes practical course based at the Carnegie Museums of Pittsburgh (CMP), which include four types of museums that provide a rich variety of hands-on experiences for students interested in museum work, and include the Carnegie Science Center (CSC), the Andy Warhol Museum (the Warhol), the Carnegie Museum of Art (CMOA), and the Carnegie Museum of Natural History.
We will spend class time in museum spaces, and the course will offer opportunities for students to interact with CMP museum professionals on a regular basis, providing practical experience-based learning in addition to theoretical exploration. Through case studies at the CMP and at other Pittsburgh organizations, students will engage with the museum studies concept of the participatory museum and evaluate the field's increasing interest in audience involvement in co-creating programming and exhibition projects.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HAA 1025 - HISTORY AND ETHICS OF COLLECTING

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will critically examine the history of public and private collecting practices, the cultural and scholarly rationales behind collecting, and the legal and ethical challenges that collections face. Case studies will include the British Museum and the Louvre, Pittsburgh's private collectors Frick and Mellon, the fate of art in Europe during World War II, the antiquities trade, and ethnographic collections. Using these and other examples, we will evaluate the arguments for and against universal art museums, the repatriation of works to source nations or original owners, and the protection of cultural heritage during times of conflict.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HAA 1030 - SPECIAL TOPICS- MUSEUM STUDIES

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will discuss specific subjects in museum studies.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HAA 1040 - ARCHITECTURE: IMAGE, TEXT, THEORY

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course treats the historical development of aesthetic theories employed in the conception of architectural design through the course of Western civilization. It focuses on Vitruvius in antiquity, the re-writings of Vitruvius in the renaissance, and the key theorists - both moralists and rationalists - of the modern era (including Ruskin, Viollet le-Duc, Le Corbusier).

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: HAA 0040; PLAN: Architectural Studies (BA)

### HAA 1050 - WORLD ART:CONTACT AND CONFLICT

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HAA 1078 - FULBRIGHT SEMINAR IN ITALIAN STUDIES

**Minimum Credits:** 3  
**Maximum Credits:** 3
The Fulbright seminar in Italian studies is the spring-term undergraduate-level course offered by the visiting Fulbright distinguished scholar from Italy. This course is typically offered in the fields of art history, cultural studies, film, history, literature, museum studies, political science, or urban studies.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

### HAA 1100 - SPECIAL TOPICS-ANCIENT

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Special topics in ancient art.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HAA 1103 - RELIGIONS OF ANCIENT EGYPT

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course introduces students to ancient Egyptian religious thought and practices with its massive temples, multitude of gods and goddesses, and fascinating funeral rites. The course includes a group project to design a hypothetical Egyptian exhibit for a museum and sessions at the Carnegie museum of natural history.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HAA 1105 - JERUSALEM HISTORY AND IMAGINATION

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Jerusalem was and remains both a magnet for cultic devotion and an epicenter of religious conflict. This course examines the political, religious, and cultural history of Jerusalem, focusing primarily on Jerusalem as a concrete and conceptual phenomenon in the premodern period. Beginning our story in the bronze age, we will explore a wide range of sources-literary, archaeological, and iconographical-that bear witness to the remarkable transformation of a small, backwater village in the hills of Canaan to a sacred center for millions of Jews, Christians, and Muslims today. We will study the political, physical, and conceptual development of this urban space through its multiple destructions and reconstructions, considering the emergence of Jerusalem as a sacred space, an apocalyptic space, and a contested space.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### HAA 1106 - PRE-COLUMBIAN ART

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course introduces students to the art and culture of pre-Columbian peoples of MesoAmerica and Peru from the time of the earliest foraging societies to the conquest by Spain. The goal is to integrate artistic expression with the cultural structures which inspired it. Students will become aware of the achievements of pre-Columbian civilizations and develop appreciation for artistic traditions native to the Western hemisphere.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### HAA 1110 - GREEK ART
Minimum Credits: 3
Maximum Credits: 3
The study of Greek art begins ca. 3000 B.C. In the so-called "age of bronze" and traditionally ends in 30 B.C. With the completion of the Roman conquest of the eastern Mediterranean. The course will trace the development of architecture, sculpture and painting in mainland Greece and to a lesser extent in the Greek colonies of Asia minor and Italy, emphasizing the changes in style and taste which took place over this period.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1130 - ROMAN ART

Minimum Credits: 3
Maximum Credits: 3
Roman art served as the funnel through which the principles of Greek art passed into European culture, but the principles were transformed in the process of transmission. The course will trace the beginnings and subsequent development of the arts of painting, sculpture, and architecture in Italy from the period of the kings to the middle years of the empire (ca. 150 A.D.).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1140 - DIGITAL ROMAN AFRICA: VISUALIZING ARCHITECTURE AND URBANISM IN ROMAN NORTH AFRICA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1160 - ROMAN ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
The course will examine the development of Roman architecture from its origins in Etruria and Central Italy to the Middle Empire (ca. 150 AD). Special attention will be given to the relationship of architectural forms, types and functions to changes in Roman politics and society and the significance of materials and outside influences on the development of local Italian traditions and forms. The interaction between Roman architectural forms and local traditions in the provinces to create a Roman imperial "Koine" will be treated only in passing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1210 - MEDIEVAL ICONOGRAPHY

Minimum Credits: 3
Maximum Credits: 3
This course examines the major themes of the art of the middle ages, including subject matter from the old and new testaments, biblical commentary and exegesis, from the classical tradition, and from the vernacular literature of the period.

Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1212 - PALAEOGRAPHY
Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the history of handwriting in the West from antiquity through the sixteenth century and a practical introduction to reading the scripts of the period.
Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1230 - PAGANS AND CHRISTIANS: THE EARLY MIDDLE AGES

Minimum Credits: 3
Maximum Credits: 3
This course examines the art of the early middle ages, paying particular attention to the slow disintegration of the Roman empire, the rapid rise of Christianity, and the evolving identity of Europe and the Mediterranean in a period of migration, crisis, and transformation. Special attention will be paid to the roles played by emperors and kings in this period, including Constantine, Justinian, Clovis and Charlemagne, and the peculiar blend of pagan and Christian cultures that defined early medieval art.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1235 - ENGLISH MEDIEVAL ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
This course treats selected examples of English medieval architecture from the seventh through the fifteenth centuries. While attention will be given to fortification and residential structures, emphasis will be placed on ecclesiastical buildings. Discussion will be directed to rationale of plan (particularly liturgical requirements), structural formulation, and style, in the light of historical context.
Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1240 - ROMANS AFTER ROME

Minimum Credits: 3
Maximum Credits: 3
Romanesque architecture, evolving from the building practices of about A.D. 800 in the Carolingian empire, marks the coming of age of European culture in the post-antique era. Most of what survives was ecclesiastical in purpose and consists predominantly of monastery churches and their claustral structures. This course will treat both formal and functional issues in the development of the Romanesque tradition and will emphasize the mature period, 1050-1140.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1255 - GOTHIC ART

Minimum Credits: 3
Maximum Credits: 3
The survey of the architecture, painting and sculpture of the period circa 1140 to 1500 with an emphasis on French art and its influence in the rest of Europe.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1258 - ITALIAN GOTHIC ART
This course, which might well be sub-titled the beginnings of the Renaissance in Italy, will explore the painting and sculpture created in Tuscany between about 1250 and 1400. What makes this period so exciting is that this is the moment when art begins to be more closely related to the realities of life. Artists begin to represent not only physical reality, but emotional and psychological reality as well, and slowly one moves toward the great rebirth which the Italians of the fifteenth century dubbed the renaissance.

Academic Career: UGRD  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1300 - SPECIAL TOPICS-RENAISSANCE

Minimum Credits: 3  
Maximum Credits: 3  
Special topics in Renaissance art.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1303 - ITAL RENAISSANCE PORTRAITURE

Minimum Credits: 3  
Maximum Credits: 3  
Topics in Italian Renaissance portraiture.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1304 - LEONARDO, MICHELANGELO AND RAPHAEL: PAINTING IN 16TH-C ITALY

Minimum Credits: 3  
Maximum Credits: 3  
This course will cover painting and sculpture in Italy from 1480 to 1580, emphasizing major figures (Leonardo, Raphael, Michelangelo, Giorgione, titian, Veronese, Andrea del Sarto, Salviato, Vasari) and consider relevant art theory and historiography (High Renaissance, Maneria and Mannerism).  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1305 - EARLY RENAISSANCE ARCHITECTURE

Minimum Credits: 3  
Maximum Credits: 3  
The early Renaissance (1420-1500) marked a fundamental change in the way mankind saw and thought about the world. This course examines the buildings, cities, projects, and theories of that period through its major designers. It concentrates on the new acceptance of rationality and modular linkage in building, which prefigures the rationality and scientific method so characteristic of the modern world.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1306 - HIGH RENAISSANCE ARCHITECTURE

Minimum Credits: 3  
Maximum Credits: 3
The architecture of the high Renaissance and mannerism (from about 1500 to about 1580 in Rome and other centers of Italy) changed forever the face of architecture. This course focuses on the Roman projects of Bramante, Raphael, Michelangelo and Leonardo da Vinci. It then follows the mutation of high Renaissance ideals into mannerism and the spread of both styles in Northern Italy, particularly in town planning and in the villas and churches of Andrea Palladio around Venice.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1307 - PAINTING IN 17TH CENTURY HOLLAND

Minimum Credits: 3  
Maximum Credits: 3  
This course will focus on key figures such as Frans Hals, Rembrandt, Vermeer, and Jacob van Ruisdael, and will also examine the development of portraiture, landscape, and genre painting. Though the primary concern will be with painting, drawings and prints will also be introduced when relevant. The historical and social context for the "golden age" of Dutch art will also be discussed.

Academic Career: UGRD  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1400 - SPECIAL TOPICS-MODERN

Minimum Credits: 3  
Maximum Credits: 3  
Special topics in modern art.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1407 - ARCHITECTURE AND ENLIGHTENMENT

Minimum Credits: 3  
Maximum Credits: 3  
This course will examine architecture, city planning, interior design, and gardening in eighteenth-century Europe as the product of social, industrial, administrative, and intellectual transformations that began to radically challenge traditional spatial configurations and conventional approaches to building. In cosmopolitan centers like London and Paris, an unprecedented explosion of print media, rapid rises in literacy, and the development of a public sphere outside official power structures opened debate in the arts to previously marginal figures. A range of new voices thus emerged that impacted policy decisions in the urban realm and proffered advice and guidance in thinking about aesthetics and artistic production. The rise of science held out the possibility that cities and institutions could be reshaped to improve human welfare through better hygiene and the expansion of commerce. Influential new classes defined by wealth or specialized knowledge generated the creation of building types for a range of new activities. Elite domestic space in particular reflects a wholesale transformation of social priorities motivated by the novel concept of privacy. Narrowly defined Renaissance discourses on the arts founded exclusively on the model of ancient Rome collapsed under an avalanche of data gathered in remote sites around the Mediterranean and through contact with more far-flung civilizations around the world. New intellectual paradigms reconfigured the relationship between individual and nature, between modern present and historical past. Consequently, the purpose of architecture mutated in the course of the eighteenth century as a bewildering range of new possibilities for shaping building and reshaping social relations were explored. Well before political revolution rocked European governments and toppled traditional hierarchies, the built environment served as a laboratory for experimentation and as a forum for reimagining society.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1408 - CLASSICAL TRAD IN ARCHITECTURE

Minimum Credits: 3  
Maximum Credits: 3
This course deals with classical Greek architecture and the subsequent reinterpretations of that tradition in Western culture, in the Roman, renaissance, and neo-classical eras. The course will explore the significance of the classical aesthetic qualities of order, harmony, symmetry and rational proportion in a variety of cultural climates and the changing roles which the classical order has played in projecting the meaning of a building.

Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1410 - REALISM AND IMPRESSIONISM

Minimum Credits: 3
Maximum Credits: 3
These movements in 19th century European art were important in the formation of later modern art currents. The course will consider the major developments in Romanticism, then study Courbet, Manet and Degas, and finally move to the major impressionist masters, Monet, Renoir, Sisley, and Pissarro. Much attention will be given to the literary and scientific framework for the art of the period.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1411 - MODERNISM

Minimum Credits: 3
Maximum Credits: 3
Something happened in the history of art around the time of Manet which set painting upon a new course. This change has been described as a kind of skepticism or uncertainty about the nature of representation in art, characterized by an attention to the material means by which illusions and likenesses are made. This course will examine several monuments in the history of modernism, in an attempt to define the political ambitions of modernism and to confront the issue of whether modernism has become simply an aesthetic or is still a viable artistic strategy in the "post-modern" era.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1440 - EXPRESSIONISM

Minimum Credits: 3
Maximum Credits: 3
A history of the development of modernist art in Germany from the founding of the "bridge" group in 1905 to the "death" of German expressionism in 1920. Although primarily focused on the art of the "bridge" and "blue rider" groups, the course will also situate this art within the broader context of German art production during these years (academic art, jugendstil, secession, dada).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1450 - ART IN THE WEIMAR REPUBLIC

Minimum Credits: 3
Maximum Credits: 3
The course will examine art and architecture in Germany from the end of World War I to the rise of the national socialist dictatorship in 1933. Emphasis will be on a chronological study of the ways in which art developed in Germany under democratic social concepts and a new internationalist outlook in the early years of the republic, and the ways art became embedded in the political structures.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
HAA 1455 - ART IN THE THIRD REICH AND MEMORIALIZATIONS OF THE HOLOCAUST

Minimum Credits: 3  
Maximum Credits: 3  
This course examines national socialist art and the fate of modernism under Hitler in the years between 1933 and 1945. As we will explore, Hitler's regime enlisted the arts and architecture, through party rallies, art exhibitions, building programs, and film, in enforcing its dictatorial policies on everything from the extermination of the Jews to sexuality and the war effort. We shall also consider the impact of the purge of modern art under Hitler on the work of such noted modernists as Otto Dix and Kthe Kollwitz, who chose to remain in Germany, and on the art of those who fled into exile, among them John Heartfield, George Groz, and Max Beckmann. The final weeks of the course will consider critical issues involved in recent-and invariably controversial--attempts in museum building, sculpture, and site-specific installations to memorialize the Holocaust and examine Germany's Nazi past.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1470 - PHOTGRPHR PHOTGRPHY SINC WWII

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the tremendous range of photographic expressions and examines the contributions of significant post-World War II image-makers.  
Academic Career: UGRD  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

HAA 1475 - MODERNITY, MODERNISM AND HOUSING

Minimum Credits: 3  
Maximum Credits: 3  
This course offers multiple perspectives on architectural modernism and modernity through the perspective of dwelling. We will consider examples of modern architecture from the Americas, Europe, Africa, the middle East and Asia from the late 19th century (starting with the debates regarding tenements in this country and working-class housing in England) and end with the demolition of the Pruitt-Igoe housing projects in St. Louis in 1972. The lens of housing will allow us to consider modernism in different geographic contexts (East and West); under different political conditions (in the colonial periphery, in the heart of empire, as part of state-sponsored redevelopment projects, and as part of the nation-building process in the developing world) and through a range of theoretical vectors (i.e. The modernist house as a manifesto for a new way of living; the attention received by vernacular building traditions and various schemes to replicate them as part of the modern project; the role of post-war technology in prefabricated housing; and the role of museums, such as the MOMA and other institutions such as the united nations in calcifying modernism in various locales around the world). This course is designed to give students a strong foundation in the theoretical, aesthetic and historical expressions of architectural modernism. It is also designed to expand the range of architectural modernism beyond the traditional Euro-Ameri-centric canon to include alternative modernisms across global geographies.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

HAA 1480 - ARCHITECTURE SINCE 1945

Minimum Credits: 3  
Maximum Credits: 3  
Treats the key developments in architecture throughout the world since World War II, including theory as well as practice. The course will focus on such figures as Frank Lloyd Wright, Miles van der Rohe, le Corbusier, James Stirling, Eeko Saarin, Louis Kahn, Kenzo Tange, Robert Venturi, Richard Rogers, and Norman Foster.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
HAA 1490 - ART SINCE 1945

Minimum Credits: 3
Maximum Credits: 3
This course will present a review of art movements in America and Europe form 1905 - 1945 in the introduction, followed by a more intensive study of post-World War II art movements in Western Europe and America from 1945 to the 1980's. We will give special attention to: a) different styles of art which fit into the label "abstract expressionism" b) different styles under "pop(ular) art" c) conceptual art movements d) issues in critical evaluations of contemporary art.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1510 - PITTSBURGH ARCHITECTURE/URBANISM

Minimum Credits: 3
Maximum Credits: 3
The course studies the physical environment of Pittsburgh; the topography, early settlement, the expansion of its industrial center, the post-war renewal, and the current shift from production to a service-based economy. A parallel study in the architectural history of Pittsburgh focuses on images of individual buildings from fort Pitt to the new skyscrapers. Student papers either expand research in building categories (industrial, domestic, etc.) Or integrate the physical development of the region with its political and social history.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1530 - EARLY AMERICAN ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
Architecture often serves as a prime document and indicator of America's past and future. The theme of this course is the search for identity in American architecture in the centuries from the colonial settlements to the Civil War. The course studies both the recorded history of American architecture and the unrecorded millennium before that, to show its surprising cohesion in the fact of great cultural and territorial diversity.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1531 - AMERICAN ARCHITECTURE SINCE INDUSTRIALIZATION

Minimum Credits: 3
Maximum Credits: 3
By 1880 traditional American architectural values had broken down under a barrage of ornament and imported European styles. But at the same moment a new American architecture was taking shape to express the new wealth of post-Civil War America and its new social order. The next hundred years would see a succession of brilliant architects in Sullivan, Wright, Mies, Johnson and the pluralists of today. These individual successes only partially mask some major problems; both constitute the underlying themes of this course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1533 - THOMMAS JEFFERSON, ARCHITECT

Minimum Credits: 3
Maximum Credits: 3
Expert in politics, music, archaeology, agriculture, foreign and ancient languages, drawing, writing and surveying, Thomas Jefferson also educated himself from a conventional dilettante to the status of a formidable power in architecture. Creator of three unquestioned building masterpieces, Jefferson was the prime mover in style in architecture. The course alternates lectures on the significant monuments with students' reports on
individual research topics.

**Academic Career:** UGRD

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**HAA 1601 - SPECIAL TOPICS-JAPANESE**

Minimum Credits: 3  
Maximum Credits: 3  
Special topics in Japanese art.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 1602 - SPECIAL TOPICS-ASIAN**

Minimum Credits: 3  
Maximum Credits: 3  
Special topics in Asian art.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 1605 - EARLY CHINA: POWER & IDENTITY**

Minimum Credits: 3  
Maximum Credits: 3  
The course is designed to look carefully at the ancient culture of the Chinese. The first task is to learn more about how and where they lived and to gain an understanding of the changes in culture throughout the period dating from c. 2500 BC-C. 200 A.D. It is hoped that the participants in the class will be able to distinguish various periods in Chinese history through study of the material culture; jade, bone, ivory, and bronze artifacts of all kinds. As each period is discussed significant art historical problems will be noted and examined.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 1610 - EARLY CHINESE PAINTING**

Minimum Credits: 3  
Maximum Credits: 3  
Illusionistic painting developed in China as an independent art form at a time contemporary with the rise of Confucian humanism. Although the craft of painting can be traced to the Neolithic period. Its real beginnings can be studied in relation to the art of writing. This course will examine paintings form c. 2500 B.C. To the tang dynasty (618-907 A.D.).  
**Academic Career:** UGRD  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**HAA 1620 - LATER CHINESE PAINTING**

Minimum Credits: 3  
Maximum Credits: 3  
A lecture and a discussion course on secular painting in China during the T'ang, Sung, Ming, and Ch'ing periods--form the VIIth century through the early XIth century. Pre T'ang works will be used mainly as introductory information, although attention will be given to the development of the literary and critical evidence of earlier eras. Buddhist painting and wall-painting will be dealt with only when these can be shown to relate to studio painting.
HAA 1630 - CHINA: VILLAGE & URBAN ARCHITECTURAL SPACE

Minimum Credits: 3
Maximum Credits: 3
The design of Chinese cities is guided by philosophical principles established in the early dynastic period. Imperial cities follow a regular grid pattern that faces south, and includes an inner city, open only to the imperial leaders and aristocrats, and an outer city in which the business is carried out. The design and use of the city is guided by Confucian and Daoist ideals. Religious centers follow palace designs, but are tied to Buddhist, Confucian and Daoist practice. Village centers are arranged according to Daoist ideas about nature called Fengshui.

HAA 1640 - 20TH CENTURY CHINESE ART

Minimum Credits: 3
Maximum Credits: 3
The 20th century in China was a period of tremendous change. Artists and the society in which they lived crashed into the modern world to struggle with the weight of tradition as well as the draw of the new. We will consider this period and artistic visions of it by looking at arts including printmaking, painting, film, installation and other synthetic and combined forms. All artistic production will be contextualized within the political and cultural history of the period.

HAA 1641 - CONTEMPORARY CHINESE ART

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1652 - JAPAN: BUDDHIST ART & RITUAL

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1653 - ANCIENT EAST ASIAN VISUAL TRADITIONS

Minimum Credits: 3
Maximum Credits: 3
This course is designed to explore the early cultures of East Asia through the study of material culture. It is arranged in chronological order, beginning with the Paleolithic and including the Neolithic, through the formation of states and empires in China, Korea and Japan.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1654 - EARLY JAPAN: MATERIAL CULTURE & RITUAL

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1656 - JAPAN: ARCHITECTURE AS PERFORMATIVE SPACE

Minimum Credits: 3
Maximum Credits: 3
This course focuses on Japanese buildings from 700-1700 CE, including ancient Shinto shrines, Buddhist temples, palaces, castles, and mausolea, with a goal toward exploring how such buildings and their interiors worked as spaces for sacred rituals and secular activities.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1660 - JAPAN: TEXT AND IMAGE IN HANGSCROLLS

Minimum Credits: 3
Maximum Credits: 3
The course examines narrative picture scrolls produced in Japan between the 12th-14th centuries as mirrors of medieval Japanese life and customs through which we can study the clothing styles, modes of travel, interior and exterior architectural styles, gender roles, and religious beliefs of medieval aristocrats, warriors, and commoners.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1680 - JAPAN: ARTIST AND CITY

Minimum Credits: 3
Maximum Credits: 3
This course will examine the dichotomy in aesthetic tastes and values visible in the arts of the Edo period (1615-1868), focusing primarily on the imperial city of Kyoto and the urban milieu of Edo. Topics to be covered include paintings, prints, performance arts, and architecture.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1692 - BUDDHISM CIVILIZATION ALONG THE SILK ROAD

Minimum Credits: 3
Maximum Credits: 3
This class serves as an introduction to Buddhism from its origins through the seventh century CE as it moved along the Silk Road, the ancient Eurasian trading network that is considered one of the earliest and most important super highways of trade and culture. Concomitantly, it serves as an introduction to the silk road as the scenario for contact and exchange. The emphasis is on religious praxis, the actors and places that transformed Buddhism and were transformed by it. We will examine archaeological remains and art and discuss how they complement or sometimes contradict textually-based historical narratives. Through the examination of four case studies we will discuss questions related to religious interaction as embodied in material culture and analyze it in context.
Academic Career: Undergraduate
HAA 1805 - EARLY FRENCH FILM

Minimum Credits: 3
Maximum Credits: 3
This course examines the first three decades of film in France, from turn-of-the century ‘primitive’ experiments to the first films with sound by Jean Vigo and Jean Renoir in the early 1930s. The works considered include narrative films from the 'teens and twenties', as well as experimental works by artists such as Marcel Duchamp, Ferdinand Leger, Man Ray, Jean Cocteau, Luis Bunuel and Salvador Dali. The course emphasizes the extraordinarily innovative contributions of French film during these years.

Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1806 - AMERICAN INDEPENDENT FILM

Minimum Credits: 3
Maximum Credits: 3
This course examines the development in the U.S. Of independently produced film as an art form, and the filmmaker as an artist, from World War II to the present. Filmmakers to be considered include Maya Deren, Kenneth Anger, Stan Brakhage, Bruce Baillie, Hollis Frampton and others. An examination will be made of the relationships between the films studied and other forms of modern art, such as "abstract expressionism", "structuralism" and "postmodernism". This course does not include "independent" Hollywood and other commercial feature filmmaking.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1820 - DOCUMENTARY FILM

Minimum Credits: 3
Maximum Credits: 3
This course examines the development of documentary film from the late 19th century to the present. The films to be considered include such classics as Nanook of the North, Man with a Movie Camera, Triumph of the Will, and Titicut Follies. The premise of the course is that documentaries are never "objective" in any absolute sense. The course will demonstrate, rather, that the forms and strategies employed in a documentary film invariably reveal the thinking of the filmmaker as an individual, and reveal the era and context in which the film was made.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1880 - WORLD CITIES

Minimum Credits: 3
Maximum Credits: 3
This course establishes a set of issues and a chronological context through which to understand the main patterns of city development. Thus the paring of St. Petersburg and Brasilia, London and loss Angeles, Amsterdam and Chicago, points out similarities and differences in their shape and social context. Student reports on individual cities are an integral element of the course, and influence the choice of cities to be studied in detail.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1900 - ARCHITECTURAL STUDIES INTERNSHIP

Minimum Credits: 3
Maximum Credits: 3
Academic credit is awarded for practical professional experience gained through a directed internship. The internship is arranged by the student through the university internship office in consultation with the director of architectural studies.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit  
**Course Requirements:** PLAN: Architectural Studies (BA)

**HAA 1901 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 3  
Independent reading and research with one faculty member.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Satisfactory/No Credit

**HAA 1903 - HISTORY OF ART AND ARCHITECTURE INTERNSHIP**

Minimum Credits: 1  
Maximum Credits: 3  
Academic credit is awarded for practical professional experience gained through a directed internship. The internship is arranged by the student through the University internship office in consultation with the undergraduate advisor in art history.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit  
**Course Requirements:** PLAN: History of Art & Architecture (BA)

**HAA 1904 - UNDERGRADUATE TEACHING ASSISTANTSHIP**

Minimum Credits: 1  
Maximum Credits: 3  
This course enables advanced majors to partner with a faculty member as a teaching assistant in a pre-existing departmental course. This collaborative project will result in the enrichment of the course and improve the teaching-learning enterprise for all parties (faculty, Undergraduate teaching assistants, and students enrolled in the course).

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Satisfactory/No Credit

**HAA 1905 - MUSEUMS STUDIES INTERNSHIP**

Minimum Credits: 3  
Maximum Credits: 3  
MUSEUM STUDIES MINORS ARE REQUIRED TO COMPLETE A 3-CREDIT ACADEMIC INTERNSHIP UNDER THE COURSE NUMBER HAA 1905. THIS IS BOTH AN ACADEMIC COURSE AND AN INTERNSHIP PLACEMENT. STUDENTS RECEIVE SUBSTANTIVE MENTORING FROM A SITE SUPERVISOR AT A LOCAL MUSEUM, COLLECTION OR HISTORIC SITE, AND ENGAGE IN PROJECTS WITH LEARNING OUTCOMES, WHETHER IN CURATORIAL, EDUCATIONAL, COMMUNICATIONS OR DEVELOPMENT DEPARTMENTS. STUDENTS ALSO PARTICIPATE IN MONTHLY COHORT MEETINGS WITH THE OTHER INTERNS ENROLLED IN THE COURSE, UNDER THE GUIDANCE OF AN HAA FACULTY MEMBER, AND ARE REQUIRED TO PRODUCE A FINAL PRODUCT. NOTE: ACADEMIC INTERNSHIPS THROUGH HAA 1905 ARE ALSO AVAILABLE TO HAA MAJORS AS AN OPTIONAL ELECTIVE. THE STUDENT MUST APPLY FOR THE INTERNSHIP THROUGH THE HAA DEPARTMENT.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit
HAA 1906 - INTEGRATED FIELD TRIP ABROAD

Minimum Credits: 2
Maximum Credits: 2
This is a course that students can take while studying abroad.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1907 - ARCHITECTURE AND THE CITY IN CENTRAL EUROPE: 19TH AND 20TH CENTURIES

Minimum Credits: 3
Maximum Credits: 3
This course will enable students to investigate the modernization of three important central European cities and the impact of new ideas about design, technology, and social organization on the development of new building types and urban infrastructure in the 19th and 20th centuries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1908 - INDEPENDENT PROJECT

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

HAA 1909 - UNDERGRADUATE RESEARCH ASSISTANTSHP

Minimum Credits: 1
Maximum Credits: 3
This course enables students to receive academic credit for serving as assistants to faculty members who are conducting pre-existing research projects (i.e. Preparing work for publication or a conference). This collaboration will result in a meaningful experience for the student that introduces them to and gives them grounding in the ethos and mechanics of research and publication.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

HAA 1910 - SPECIAL TOPICS-ARCHITECTURE

Minimum Credits: 3
Maximum Credits: 3
Special topics in architecture. Course varies from term to term.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1911 - ARCHTCRL SEM: MONOGRPHIC TOPCS

Minimum Credits: 3
Maximum Credits: 3
A seminar for senior architectural studies majors, with changing topics: treats single architects, buildings, or cities.
Academic Career: UGRD
HAA 1912 - ARCHITECTURE AND DIGITAL MEDIA 1

Minimum Credits: 3  
Maximum Credits: 3
An introduction to the graphic communication of architectural documents utilizing computer aided drafting (CAD) techniques. This introductory cad course is designed to give students a working knowledge of the AutoCAD drafting system. The course has been designed to better acquaint students with concepts, processes and skills required by professionals in the field to create and modify computer-generated drawings. Students will learn the commands and functions necessary to input, process and output two dimensional working drawings in the form of plans, elevations and sections. Three-dimensional visualization will also be covered as a means to explore massing and proportion. In addition to the fundamental design methods and practices for the creation of architectural drawings, exercises will focus on fundamental concepts such as scaling, dimensioning, annotating as well as maintenance of CAD drawing files through the use of operating system commands.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1913 - FOUNDATIONS STUDIO 1

Minimum Credits: 6  
Maximum Credits: 6
The architectural studies seminar is intended to provide experience working on an advanced level with a specialized topic in architecture. In some years the seminar will deal with history or theory, in others with conceptual issues. For this offering it will focus on several particular problems in the development of Frank Lloyd wright's career in architecture.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

HAA 1914 - ARCHITECTURE AND DIGITAL MEDIA 2

Minimum Credits: 3  
Maximum Credits: 3
The architecture, engineering, construction and operations industry has well documented inefficiencies stemming primarily from fragmentation in the project delivery process. At the same time, the industry faces significant challenges such as the demand to deliver projects more economically, the desire for more environmentally responsible projects, and the expectation of more predictability in performance -- all of which call for more integration and collaboration throughout a project's lifecycle. New technologies such as building information modeling (BIM) are revolutionizing architecture and construction, providing a platform that allows project information to be captured, structured and analyzed throughout the entire lifecycle of a project, enabling a more integrated, collaborative process that supports more informed decision making and higher levels of efficiency. In this course, students will learn the principles of BIM using Revit software.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: School of Arts and Sciences (ARTSC)

HAA 1916 - ARCHITECTURE DESIGN STUDIO 1

Minimum Credits: 6  
Maximum Credits: 6
At the core of every nationally accredited school of architecture is the design studio. The design studio integrates skills learned in other architecture courses in the production of a design project. This course prepares students for the rigor of the architectural design process and exposes them to the unique pedagogical experience of a design studio. This course is designed to give students who are majoring in architectural studies and who intend to pursue a professional degree in architecture at the graduate level exposure to a sophisticated conceptual framework for thinking about three-dimensional composition and architectural problem solving. The course is also intended to emphasize the necessity of excellent graphic skills and
technical skills in model-making to communicating design ideas. This course is meant to serve as an intermediary step between the /architectural studies seminar/ (HAA 1913) and the studio arts requirements for the architectural studies major, and the more advanced architectural design work in HAA 1917.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HAA 1913

HAA 1917 - ARCHITECTURE DESIGN STUDIO 2

Minimum Credits: 6
Maximum Credits: 6
This course is designed to give students who are majoring in architectural studies and who intend to pursue a professional degree in architecture at the graduate level exposure to a sophisticated conceptual framework for thinking about three-dimensional composition and architectural problem solving known as /system-based design/. The course is also intended to emphasize the necessity of excellent graphic skills and technical skills in model-making to communicating design ideas. This course is meant to serve as a capstone for the architectural studies major.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: HAA 1916

HAA 1918 - DESIGN STUDIO 3

Minimum Credits: 6
Maximum Credits: 6

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1919 - DESIGN STUDIO 4

Minimum Credits: 6
Maximum Credits: 6
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1920 - INTRODUCTION TO HISTORIC PRESERVATION

Minimum Credits: 3
Maximum Credits: 3
This course explores the goals, methods, and practice of historic preservation in the United States through a variety of historical, theoretical, and practical points of view. Through intensive reading, class discussion, field trips, case studies, and guest speakers representing various sectors of the preservation community in Pittsburgh, the course investigates such topics as: (1) the influence of historic preservation in the built environment; (2) philosophies and politics of preservation; (3) 'reading' buildings and landscapes for their cultural meanings; (4) protecting historic places and documenting their significance.*

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Arts and Sciences (ARTSC)

HAA 1921 - DOCUMENTATION AND CONSERVATION STUDIO
This course is intended to provide an intensive foundation in the proper techniques of working in the field of architectural conservation. Primary emphasis is on learning directly from specific buildings and sites, with secondary emphasis on placing these findings within a practical preservation planning context. Background knowledge for analysis and for developing preservation recommendations will come from intensive reading, guest speakers, case studies, class discussions, field trips and exercises in building materials conservation. Concurrent with the development of approaches to conservation, students will also acquire or sharpen a variety of academic skills such as the ability to conduct historical research; graphic representation techniques; and professional writing and public presentation skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HAA 1922 - PRESERVATION - TEXTS AND THEORY

Minimum Credits: 3
Maximum Credits: 3
This course is the capstone writing seminar for architectural studies majors pursuing the track in preservation planning.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HAA 1923 - GLOBAL PRESERVATION

Minimum Credits: 3
Maximum Credits: 3
The late-nineteenth and early-twentieth century debates regarding the role of the architectural monument as a signifier of the past, as a container of memory and more importantly authenticity, were the definitive moment in the institutionalization and professionalization of architectural preservation around the world. In a 1903 essay titled 'The Modern Cult of Monuments,' art historian Alois Reigl claimed that while the creation of monuments (i.e. structures built to memorialize certain events or persons) had a long history that predates modernity, the 'cult of the monument' (i.e. the allocation of the monument as a unique and original object in a pre-ordained historical narrative of social and cultural evolution) came about as recently as the nineteenth-century. It is this coupling of the advent as well as the progress of modernity along with the formalization of systems of historic preservation that this course seeks to explore.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HAA 1950 - SENIOR THESIS

Minimum Credits: 3
Maximum Credits: 3
In this course a senior major in the history of art will research and write a research paper and present it as if for publication. The area and topic will be decided upon in consultation with a specific faculty member.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

HAA 1951 - HONORS RESEARCH SEMINAR

Minimum Credits: 1
Maximum Credits: 1
This seminar is intended for undergraduate students pursuing an honors thesis project in the department of the History of Art and Architecture. Students will devise and carry out research for their thesis paper under the direct supervision of a qualified faculty member in the department, depending on the student's specialized interest. That faculty member will guide the student through the production of the paper in accordance with stipulated deadlines for outlines and drafts leading up to the final work.
HAA 1990 - 20THC RUSSIAN ART: BETWEEN EAST AND WEST

Minimum Credits: 3
Maximum Credits: 3
This course surveys Russian art of the 20th century - including painting, graphic design, handicrafts, stage design, and architecture spanning the period from the world of art/Mirisskustva (1890s) to the present day. It (1) acquaints students with major art groups, movements and their key representatives, (2) traces the role of icons and folklore traditions in works throughout the century, (3) elucidates the system of patronage and museums and galleries, and (4) examines the symbiosis between Russian art and ideology.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

HONORS 0001 - UNIVERSITY ORIENTATION

Minimum Credits: 1
Maximum Credits: 1
An informational seminar open to honors-qualified freshmen. Students gain a better understanding of university services, functions and policies as well as the opportunities available through the honors college.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 0010 - CHANCELLOR SCHOLAR ORIENTATION

Minimum Credits: 1
Maximum Credits: 1
An informational seminar open to freshmen chancellor scholars. Students will gain a better understanding of university services, functions and policies as well as the opportunities available through the honors college.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 0021 - SEMINAR: HUMANITIES

Minimum Credits: 1
Maximum Credits: 1
An informational seminar open to honors-qualified sophomores considering majors in the humanities. Students will explore majors in greater depth, how to conduct research in the disciplines, and preparation for post-graduate opportunities.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 0080 - BRACKENRIDGE RESEARCH SEMINAR

Minimum Credits: 1
Maximum Credits: 1
This seminar will provide Brackenridge research fellows with the opportunity to develop their summer research projects further, culminating in an abstract, a research paper and a poster.

Academic Career: Undergraduate
HONORS 0081 - HONORS COLLEGE/HEALTH SCIENCES RESEARCH SEMINAR

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 0082 - SEMINAR IN CONDUCTING RESEARCH

Minimum Credits: 1
Maximum Credits: 1
This seminar is intended for students wishing to learn about research, particularly the kind of research intended to result in a significant project, e.g., a research monograph, a thesis written for a senior project for the BPhil degree. Students at any point of their research process will benefit from this seminar. Topics will include how to do research from an interdisciplinary perspective, how to focus in on a suitable research topic, how to approach faculty to engage their assistance, and the various research opportunities available.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 0083 - SEMINAR IN COMMUNITY-BASED RESEARCH

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Satisfactory/No Credit
Course Requirements: MIN CUM GPA: 3.25

HONORS 0101 - CHANCELLOR SCHOLAR FRESHMAN SEMINAR

Minimum Credits: 1
Maximum Credits: 1
A forum for a variety of scholarly discussions for freshman chancellor scholars.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 0102 - CHANCELLOR SCHOLAR SOPHOMORE SEMINAR

Minimum Credits: 1
Maximum Credits: 1
A forum for a variety of scholarly discussions for sophomore chancellor scholars.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 0103 - CHANCELLOR SCHOLAR JUNIOR SEMINAR
Minimum Credits: 1
Maximum Credits: 1
A forum for a variety of scholarly discussions for junior chancellor scholars.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 0104 - CHANCELLOR SCHOLAR SENIOR SEMINAR

Minimum Credits: 1
Maximum Credits: 1
A forum for a variety of scholarly discussions for senior chancellor scholars.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

HONORS 1010 - SPECIAL TOPICS SEMINAR

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis
Course Requirements: MIN CUM GPA: 3.25

HONORS 1020 - SPECIAL TOPICS SEMINAR 2

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

HONORS 1021 - ENERGY, SCIENCE, SOCIETY & COMMUNICATION SEMINAR

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

HONORS 1120 - HUMAN SCIENCES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HONORS 1130 - DISCOURSES IN THE HUMANITIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: MIN CUM GPA: 3.25

HONORS 1131 - GREAT BOOKS: A SEMINAR IN THE MODERN HUMANITIES, PART 1

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

HONORS 1132 - GREAT BOOKS: A SEMINAR IN THE MODERN HUMANITIES, PART 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

HONORS 1133 - GREAT BOOKS AND MODERNITY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

HONORS 1140 - DISCOURSES IN THE SOCIAL SCIENCES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HONORS 1150 - DISCOURSES IN THE NATURAL SCIENCES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HONORS 1160 - DISCOURSES IN HUMAN KNOWLEDGE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
HONORS 1410 - SPECIAL TOPICS: NATURAL SCIENCES

Minimum Credits: 3
Maximum Credits: 3
A course offering a special topic in the natural sciences.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

HONORS 1510 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course focuses on a special topic which will vary from term to term.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HONORS 1540 - HONORS FIELD STUDIES IN WYOMING

Minimum Credits: 6
Maximum Credits: 6
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

HONORS 1541 - HONORS FIELD STUDIES AT SPRING CREEK

Minimum Credits: 5
Maximum Credits: 5
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

HONORS 1542 - HONORS FIELD STUDIES IN WYOMING - STUDIO ARTS

Minimum Credits: 3
Maximum Credits: 3
This summer field study program will be conducted at the Allen I. Cook spring creek preserve near Rock River, Wyoming. The course will focus on studio arts topics.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

HONORS 1544 - READING THE EARTH: WYOMING FIELD STUDIES IN ECOLOGY AND PALEONTOLOGY

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Elective Basis
HONORS 1610 - CONCEPTS AND VALUES IN MEDICINE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HONORS 1611 - CONCEPTS AND VALUES IN MEDICINE-WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SU3 Elective Basis

HONORS 1620 - CLINICAL AND MEDICAL RESEARCH

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HONORS 1630 - CRITICAL EVALUATION OF SCIENTIFIC LITERATURE

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HONORS 1640 - MEDICINE AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

HONORS 1905 - BPHIL THESIS RESEARCH

Minimum Credits: 1
Maximum Credits: 6
Undergraduates pursuing the bachelor of philosophy degree through the honors college may register for this course only after their thesis proposal has been approved and they have been admitted to honors college candidacy.

Academic Career: Undergraduate
Course Component: Thesis Research
Grade Component: Satisfactory/No Credit

BUSHRM 1050 - HUMAN RESOURCES MANAGEMENT
Minimum Credits: 3  
Maximum Credits: 3
Provides an introduction to the management of human resources at the organizational level. HRM is viewed as an integral part of the basic management process and the orientation of the course is toward developing managerial skills useful in establishing organizational personnel policy. Specific topics include the role of HR in the management process, HR planning and forecasting, job information systems, recruitment and selection, HR development, compensation, legal framework and evaluation.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: College of Business Admin; LVL: So, Jr, Sr

**BUSHRM 1447 - TOPICS IN INTERNATIONAL HUMAN RESOURCE MANAGEMENT**

Minimum Credits: 3  
Maximum Credits: 3
This course explores topics of current interest in international human resources management. Topics covered will vary by instructor in areas such as HRM planning, selection, recruitment, appraisal, compensation and benefits, training and development, labor relations, and organization culture and structure.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**BUSHRM 1665 - NEGOTIATING IN BUSINESS**

Minimum Credits: 3  
Maximum Credits: 3
Negotiating permeates human interactions. It affects balance and distribution of resources among nations, organizations, families and individuals. In business, outcomes of negotiations influence bottom-line. Students will understand theory behind successful negotiations; recognize situations that call for negotiation; explore use of alternative negotiating strategies and tactics; and be able to analyze, plan, and carry out a successful negotiation.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: BUSHRM 1050 (MIN GRADE 'C'); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSHRM 1670 - GLOBAL WORKFORCE MANAGEMENT AND CHANGE**

Minimum Credits: 3  
Maximum Credits: 3
This course provides a framework for understanding business and legal challenges associated with effective workforce management around the world. We will examine how labor markets in the Americas, Europe and Asia compare in terms of labor costs and supply, workplace culture, and employment law. News events will be used to illustrate the complex cultural and regulatory environment that multi-international firms face in such areas as talent and performance management, offshore outsourcing, downsizing and industrial relations. Finally, we will focus on successful expatriate assignments and globally-oriented careers.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: CREQ: BUSHRM 1050 (MIN GRADE 'C'); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSHRM 1675 - HUMAN RESOURCES STAFFING**

Minimum Credits: 3  
Maximum Credits: 3
Provides an in-depth examination of the organizational staffing process. Procedures for human resource needs assessment such as personnel audits and forecasting are discussed. Recruitment strategies and recruitment sources are explored. The process of organizational choice by candidates may be covered. Emphasis on understanding basic types of assessment tools and procedures for choosing new employees. Core concepts in measurement and validity are discussed. Issues relating to organizational entry and socialization may also be covered.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: BUSHRM 1050 (MIN GRAD ‘C’); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSHRM 1677 - TRAINING AND DEVELOPMENT**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

In 2012 U.S. Firms spent $62 billion on training and development programming for their employees. Such programs address the diversity of skills and demographic characteristics of the workforce, the complex technologies that workforce utilizes in the workplace and the competition resulting from ongoing globalization. This course is designed to provide students with an understanding of the strategic advantage gained by a firm as it designs and implements training and development programs. Topics covered include needs assessment, training design, training methods, and evaluation of training. In addition, employee, career and management development and the use of technology in training will be examined.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: BUSHRM 1050 (MIN GRADE ‘C’); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSHRM 1680 - COMPENSATION AND PERFORMANCE MANGEMENT**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

Examines the general structure of an organization and the rewards employees seek in exchange for the efforts and contributions they provide. Topics include: rewards and motivating work environment; government and union influences; job content analysis, description and evaluation; determining competitive relationships, developing pay structures; measuring performance and paying for performance; employee benefits; administration of the compensation plan; executive, managerial, professional, and sales compensation.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: BUSHRM 1050 (MIN GRADE ‘C’); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSHRM 1685 - EMPLOYMENT AND LABOR RELATIONS**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

Provides a close examination of the day-to-day labor-management relationship and processes. Considers contract negotiations, contract administration, discipline and grievance procedures, and third-party conflict resolution assistance such as mediation, fact-finding and arbitration. Emphasis is placed on the structure, organization, and objectives of the parties. The similarities and differences between private and public-sector bargaining are also considered.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: BUSHRM 1050 (MIN GRADE ‘C’); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSHRM 1687 - HUMAN RESOURCES STRATEGY AND PLANNING**
Minimum Credits: 3
Maximum Credits: 3

The role of human resources in creating a sustainable competitive advantage is covered in detail. Topics often include organizational factors (e.g. cultures, values) that impact HR planning and strategy, HR environmental analysis and competitor analysis, internal analysis of the HR system for competitive initiatives, HR contributions to business strategy formulation, human resources forecasting and planning, HR strategy implementation, succession planning, facilitating organizational change, downsizing and restructuring the organization, and HR aspects of mergers and acquisitions.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: BUSHRM 1050 (MIN GRAD 'C'); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSHRM 1688 - HUMAN RESOURCE ANALYTICS**

Minimum Credits: 3  
Maximum Credits: 3

Three credit elective in the College of Business Administration. The course is designed to acquaint students with this rapidly expanding area in the human resource field. Using simulations from a variety of human resource analytics packages common in HR departments, students will learn to critically assess data and metrics for human resource problem solving and examine the manner in which such data is organized and reported. The class will also provide opportunity to interpret and report results from statistical and predictive analysis to aid decision making in the firm.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: STAT 1100 or 1000

**BUSHRM 1689 - SPORTS MANAGEMENT**

Minimum Credits: 3  
Maximum Credits: 3

Many students aspire to careers in the NFL, NBA, and major league baseball. But, as we all know, employment prospects in those organizations are decidedly limited. However, a February, 2014 forbes.Com post indicates that the sports industry as a whole will grow by $145.3 billion between 2010 and 2015. This course recognizes that the sports industry is much broader than just professional sports teams including firms in sports clothing, sports equipment, sports drink, sports medicine, venue management, food and beverage, sports media, and sports marketing. The sports industry is a labor intensive industry with human resource and project management skills as key success factors. This class is designed to examine these administrative skills which will serve well you in any of your career pursuits while satisfying your passion for sports. Planned topics, exercises and activities in the course include a look at game day preparations, facilities management including a behind the scenes tour of a facility, player selection (through a draft simulation) and retention, coaching, licensing, sports media, and sports marketing.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, or Undeclared.

**BUSHRM 1690 - HUMAN RESOURCES MANAGEMENT INTERNSHIP**

Minimum Credits: 3  
Maximum Credits: 3

The human resources management internship provides business credits for project assignments that augment a professional HRM work experience.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit  
**Course Requirements:** PREQ: BUSHRM 1050 (MIN GRAD 'C')

**BUSHRM 1695 - HUMAN RESOURCES MANAGEMENT INDEPENDENT STUDY**
Minimum Credits: 1
Maximum Credits: 3
An independent study course for students desiring to pursue in greater depth a specific set of human resources management issues or problems to which they have been introduced in other human resources management courses. The course involves directed reading and research under the guidance of a full-time faculty member.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade
Course Requirements: PREQ: BUSHRM 1050 (MIN GRAD 'C')

BUSHRM 1711 - ITALIAN HOSPITALITY AND TOURISM

Minimum Credits: 3
Maximum Credits: 3
The course will explore the history, culture and heritage of Italy including food, wine and coffee. Museums, historical and religious landmarks will also be explored. Tourism is an important aspect of the Italian culture. Students will take an objective view on agritourism, wine tourism and ecotourism and analyze the impact and benefit to Italian tourism industry.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSHRM 1712 - INTRODUCTION TO SPA MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
This course will provide a contemporary look at the SPA industry and importance of SPA operations and management by providing site visits, guest speakers and hands-on experiences in the SPA industry. It will also address the SPA industry basics, how to establish the business, operations and management, business skills and knowledge, and future trends in the industry. This course will help students understand what it takes to manage a SPA and succeed in this evolving industry.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IE 0015 - INTRODUCTION TO INFORMATION SYSTEMS ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to systems thinking and information management. Students learn to identify the risks of system sub-optimization created by silo oriented operations in organizations. They practice how to define, design, and develop databases needed to satisfy the information requirements of their customers and the entire organization. Using object based data models students design a conceptual model to discuss with customers (end users) and then convert the concepts to relational models for database developments using normalization methods. To practice the database development process students are assigned a project that requires research and preparation for customer interviewing, conceptual design, customer verification, logical design, prototype development using ms-access, testing and presentation of results. This course serves as a primer for advanced courses in information management and systems optimization.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0012 or 0016 or 0711; PLAN: Industrial Engineering (BSE or BEH)

IE 1012 - MANUFACTURE OF STRUCTURAL NANOMATERIALS

Minimum Credits: 3
Maximum Credits: 3
Description: this course covers contemporary research topics on the design and manufacture of nanostructured materials. In addition to design and
manufacturing, this course would also emphasize the nanometer-scale phenomena that make nanostructured materials particularly attractive for structural applications. Topics such as dislocation theory, large strain plasticity phenomena, super plasticity and kinetics of coarsening will be discussed in the context of structural nanomaterials.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### IE 1013 - MANUFACTURING PROCESS ENGINEERING

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The objective of this course is to instill a fundamental understanding of manufacturing processes by focusing on the processes, metallurgy and mechanics of deformation in metal forming. To this end, analysis techniques will be developed from solid mechanical principles (stress-strain relationship, deformation and failure) which would then be applied bulk deformation and material removal processes. The course assumes no prerequisites except basic concepts of stress, strain and strength of materials.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### IE 1014 - DATA BASE DESIGN

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course introduces the fundamental aspects of database design and management within the context of a relational data base management system (DBMS). Covered topics include: relational model, database design life-cycle, database design optimization, client/server architecture, data modeling, SQL, database security, database management, data warehousing, internet database environment. Students will gain hands-on experience in analysis, design, implementation, and management of relational data base systems.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### IE 1015 - GEOGRAPHIC INFORMATION SYSTEMS

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Explore the concepts and history of geographic information systems and learn to effectively use the most utilitarian GIS software, ArcGIS.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### IE 1035 - ENGINEERING MANAGEMENT

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course focuses on management theory applied to engineering and technical organizations. Topics include: the management process and management functions (planning, organizing, leading, and controlling); project management; managing technical people; engineering ethics, globalization, and other contemporary management concepts.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture
IE 1039 - ENTREPRENEURSHIP FOR ENGINEERS

Minimum Credits: 3
Maximum Credits: 3
This course considers the development of a new technology company from ideation and opportunity evaluation to capital generation and launch. It includes an understanding of accounting principles, budgeting, capital markets, venture capital, operating in the development stage, executive and employee requirements, product development, and growing the company.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Industrial Engineering (BS)

IE 1040 - ENGINEERING ECONOMIC ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Discusses cost estimation, time value of money, interest rate calculations, economic equivalence concepts, comparison of alternative investments, evaluating economic life and replacement alternatives, depreciation, the impact of taxes on engineering economic decisions, and dealing with uncertainty.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

IE 1042 - ENGINEERING DERIVATIVES MARKET

Minimum Credits: 3
Maximum Credits: 3
The basic building blocks for engineering futures contracts, call and put options, and swaps are studied within the context of real-world environments. By the end of this course learners will have a good understanding of how these tools are built for the purposes of hedging risks and formulating portfolio strategies, all within the goal of managing financial risk.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0140 or 0220 or 0221 or 0235; PROG: Swanson School of Engineering (UENGR)

IE 1044 - INVESTMENT SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to basic concepts of modern quantitative finance and investment. Group projects involving financial market data. Topics: basic interest rate; evaluating investments: scenario-based analysis and Monte Carlo simulation; fixed-income markets: bonds, yield, duration, and portfolio immunization; measuring risk: volatility and value at risk; the concept of investment diversification in the presence of uncertainty; designing optimal security portfolios; the capital asset pricing model, practical implementation of the concepts, including comparison of loan (e.g., house and auto) terms, credit card financial terms; derivative market and option pricing. No prior knowledge of finance required.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1070 or ENGR 0020; PLAN: Industrial Engineering (BSE or BEH)

IE 1051 - ENGINEERING PRODUCT DESIGN
Minimum Credits: 3
Maximum Credits: 3
Lectures will cover the following: cad functions and cad systems; design process; hardware issues; software issues; use of commercial software; graphics primitives; mathematical transformations; solid modeling; database management systems; relational databases; adding intelligence to cad systems. Laboratory sessions will deal with a diversity of design projects utilizing commercial software packages.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1052; PROG: Swanson School of Engineering

IE 1052 - MFG PROCESSES AND ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Introduction to manufacturing principles and their importance in product development. Traditional and emerging processes are covered, including additive manufacturing, micro manufacturing, and nonmanufacturing. The integration of manufacturing, design, and materials is presented as a key to rapid product realization. Unit manufacturing processes are considered in work cell organization, flexible flow lines, and quality control. The course laboratory involves examination of the details of manufactured products, using various manufacturing processes, and learning the importance of material and process selection in product development.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: School of Engineering

IE 1054 - PRODUCTIVITY ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Introduction to industrial engineering concepts and thought process mapping, operations analysis, and design, 6s, lean systems, root cause analysis, methods engineering, standards development, predetermined time systems, computerized work measurement, motivation and incentives.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: ENGR 0020 or IE 1070; PROG: Swanson School of Engineering

IE 1055 - FACILITY LAYOUT AND MATERIAL HANDLING

Minimum Credits: 3
Maximum Credits: 3
Introduction to facility layout and location topics including activity relationships, space and personnel requirements, layout types, manual and computer algorithms for constructing layouts, single facility location methodologies, and warehouse operations. Material handling methods and equipment including conveyors, lift trucks, carousels, automated guided vehicles, and automated storage and retrieval systems are also discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1070 or IE 1081 or ENGR 0020; CREQ: IE 1052; PLAN: Industrial Engineering(BSE)

IE 1061 - HUMAN FACTORS ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
A study of human abilities, characteristics, behavior, and motivation in the design, development and operation of components and systems designed for human use.

Academic Career: Undergraduate
**IE 1062 - DATA MINING**

Minimum Credits: 3  
Maximum Credits: 3  
This is an introductory data analytics class that requires probability as a prerequisite. The objective is to prepare students to effectively collect and analyze data and to teach data-driven thinking, problem-solving and decision-making. In this class, we will cover various statistics and data mining methodologies and use them to analyze real-world problems.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: ENGR 0020 or IE 1070; PROG: School of Engineering

**IE 1070 - PROBABILITY, RANDOM VARIABLES, AND DISTRIBUTIONS**

Minimum Credits: 3  
Maximum Credits: 3  
The main objective of this course is to introduce IE majors to probability and probabilistic modeling as a foundation for motivating statistics and statistical methods.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: IE 1070 and IE 0015; LEVEL: Sophomores and above; PROG: Swanson School of Engineering

**IE 1071 - STATISTICAL TESTING AND REGRESSION**

Minimum Credits: 3  
Maximum Credits: 3  
Hypotheses testing; multiple regression; empirical model building; analysis of variance and design of experiments; goodness-of-fit tests and contingency tables; introduction to statistical quality control.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: MATH 0150 or 0230 or 0231 or 0235

**IE 1072 - DESIGN OF EXPERIMENTS & QUALITY ASSURANCE**

Minimum Credits: 3  
Maximum Credits: 3  
This elective course serves as a continuation of the second course to provide IE majors with background in designed experiments and quality assurance methods.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: ENGR 0020 or IE 1070 (MIN GRADE 'C'); PROG: School of Engineering

**IE 1073 - MODELING IN SPORTS AND GAMES**

Minimum Credits: 3  
Maximum Credits: 3  
This course will cover fundamental stochastic and statistical modeling concepts arising in the context of sports prediction and strategy. The course
will rely heavily on tools such as statistical analysis and Markov processes. Elementary concepts from game theory, decision theory and Markov decision processes will be introduced. We will consider examples arising in baseball, basketball, football and ice hockey, as well as other sports and games. Students will present a project on a topic of their choosing.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: IE 1081 and 1082 and 1083; PROG: Swanson School of Engineering

**IE 1076 - TOTAL QUALITY MANAGEMENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The total quality management philosophies of Deming, Juran, and Crosby are the basis for exploring modern concepts of kaizen, quality control, Taguchi, EVOP, etc. The course will include learning the techniques used in TQM as well as gaining an understanding of how major corporations implement TQM programs.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: IE 1071 or ENGR 0020; PROG: Industrial Engineering

**IE 1079 - Logistic and Supply Chain Engineering**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Modern supply chains are based on networks with a number of actors from manufacturer to distributor to retailer. This course covers the use of modeling for coordinating production, inventory, distribution, and transportation across a supply chain network.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (ENGR 0020 or IE 1070) and IE 1081; PROG: Swanson School of Engineering

**IE 1080 - SUPPLY CHAIN ANALYSIS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
An overview of supply chain management with an emphasis on operations and strong quantitative orientation. Supply chain strategies; sourcing decisions; demand forecasting; aggregate planning; managing supply and demand; production and inventory control systems including MRP and JIT; dealing with uncertainty; distribution networks; coordination and integration.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: IE 1055 or 1082; PROG: Swanson School of Engineering

**IE 1081 - OPERATIONS RESEARCH**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Introduction to the decision-making process and mathematical modeling; theory and methodology of the simplex algorithm; duality theory, complementary slackness, post-optimality analysis; transportation and assignment problems; introduction to integer programming application to real-life case problems; computer codes.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: MATH 0250 or 0280 or 0206 or 0135 or 1181; PROG: Swanson School of Engineering
IE 1082 - PROBLSTC METH IN OPERATNS RES

Minimum Credits: 3
Maximum Credits: 3
Stochastic decision modeling techniques including discrete-time Markov chains, continuous time Markov chains and queuing theory.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (IE 1070 or ENGR 0020) and (IE 1071 or 1081); PROG: Swanson School of Engineering

IE 1083 - SIMULATION MODELING

Minimum Credits: 3
Maximum Credits: 3
Random number generation; distribution functions and random variates; game of chance; applications of discrete event simulation methods of queuing, inventory control, and production planning problems. Introduction to special-purpose simulation languages.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1071 or ENGR 0020; PROG: Swanson School of Engineering

IE 1085 - DEPARTMENTAL SEMINAR

Minimum Credits: 0
Maximum Credits: 0
Departmental seminars present the engineering viewpoint by prominent speakers from industry and government. Also serves as an organizational forum for the university chapter of the institute of industrial engineers.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

IE 1086 - DECISION MODELS

Minimum Credits: 3
Maximum Credits: 3
Decision making under uncertainty is the key to understanding a variety of problems from industry, including inventory control, revenue management, energy, healthcare, and logistics. This course covers the fundamentals of stochastic (sequential) decision models, including data-driven and risk-averse methods, with applications to real-world problems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1070 or ENGR 0020; PROG: Swanson School of Engineering

IE 1089 - ADDITIVE MANUFACTURING

Minimum Credits: 3
Maximum Credits: 3
In this course we will analyze the seven primary types of additive manufacturing, their materials, and machines, highlighting their benefits and limitations. Examples of industrial applications will be given along with ongoing research trends and future directions. Labs will focus on design for additive manufacturing, data capture and input, machine setup, and post processing. Field trips will include observation of machine building and part production at some local industries.
Academic Career: Undergraduate
Course Component: Lecture
IE 1090 - SENIOR PROJECTS

Minimum Credits: 4
Maximum Credits: 4
Analytical investigation techniques for total project problems in technical organizations. Involves solving of client problems utilizing industrial engineering capabilities acquired by students during program of study. Provides students with project team experience, report writing and seminar presentation of team results. Students must be enrolled in this course at least one month prior to the start of the semester.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

IE 1098 - SPECIAL PROJECTS

Minimum Credits: 1
Maximum Credits: 4
Independent study projects in specialized industrial engineering topics. Students must have the permission of a faculty member who agrees to mentor the independent study. Independent study is not permitted for subject areas that are part of the regularly scheduled coursework.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: CREQ: IE 1035 or 1080 or 1083; PROG: Swanson School of Engineering

IE 1101 - FACILITY LOGISTICS

Minimum Credits: 3
Maximum Credits: 3
This aim of this course is to study and analyze key factors affecting the productivity of logistics operations and material flows in facilities. In particular, the course focuses on warehouse and distribution center design and operation including: material handling equipment and system design, order picking, sortation systems, and cross docking. There is also an investigation of the use of different labor strategies such as bucket brigades.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1055; PROG: Swanson School of Engineering

IE 1102 - LEAN SIX SIGMA I (GREEN BELT)

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to lean and six sigma principles with an emphasis on the application of statistics to quality control. Topics include value stream mapping, various lean tools, DMAIC methodology, data collection and measurement, and applications of ANOVA and doe. A project is required and the student should be prepared for green belt certification at the end of the course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1054 and (IE 1071 or ENGR 0020); LVL: Junior or Senior; PROG: Swanson School of Engineering

IE 1103 - LEAN SIX SIGMA II (BLACK BELT)

Minimum Credits: 3
Maximum Credits: 3
This is a follow up course in lean and six sigma covering topics such as influence principles and techniques, systems analysis, design for six sigma,
lean enterprise analysis and response surface methods. Several projects are required and the student should be prepared for black belt certification at the end of the course.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: IE 1102; PROG: Swanson School of Engineering

### IE 1106 - OPERATIONS IMPROVEMENT IN HEALTHCARE

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course leads students to apply basic industrial engineering tools to healthcare. This includes fact gathering through interviews & observation, process mapping, system analysis and modeling, work sampling, work study and workflow improvement. Using the health operations laboratory, students learn to model core operations of key hospital departments, and are required to develop expertise in one of the following areas: work measurement in healthcare, quality improvement in healthcare, department productivity management, supply chain management, patient workflow through a department.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (IE 1040 and IE 1054) and (ENGR 0020 or IE 1070); PLAN: Industrial Engineer (BEH or BSE)

### IE 1107 - HEALTHCARE INFORMATION SYSTEMS

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

### IE 1108 - HEALTH SYSTEMS ENGINEERING

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course uses the systems approach to lead students to understand the forces that drive the healthcare industry in the continuum of care and the role i.e. plays in improving healthcare delivery performance. The course focuses on the theme of i.e. in healthcare organizations as a catalyst of innovation and change. Students learn about the applications of i.e. in healthcare, public health, and health care organization sectors; leaders in the field will discuss the different healthcare sectors from an i.e. perspective. Students will learn how the i.e. tools and methodologies which they already understand can be used in healthcare and how the performance improvements they generate relate to quality systems including the Baldrige performance excellence program.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (IE 1040 and IE 1054) and (ENGR 0020 or IE 1070); PLAN: Industrial Engineer (BEH or BSE)

### IE 1110 - HEALTH SYSTEMS ENGINEERING SEMINAR

- **Minimum Credits:** 0  
- **Maximum Credits:** 0  
The seminar supplements the education provided by health policy and management and industrial engineering departments by creating a forum for exposure and discussion of healthcare systems engineering issues. Students become aware and are exposed to the role of vendors/consultants that bring solutions for healthcare delivery processes. The standards for professional leadership required for health management are reinforced.

**Academic Career:** Undergraduate  
**Course Component:** Seminar
IE 1122 - FUNDAMENTALS OF SYSTEMS ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
This course will focus on the fundamentals of systems engineering, including technical processes (e.g., requirements definition, architecture design, system verification), technical management processes (e.g., project planning, risk management), agreement processes (acquisition and supply) and project-enabling processes (e.g., life-cycle model management, quality management). Key systems engineering techniques and methods (e.g., system modeling and simulation, function-based systems engineering) will also be discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Industrial Engineering (BSE or BEH); LEVEL: Senior

IE 1123 - PROJECT MANAGEMENT FOR ENGINEERS

Minimum Credits: 3
Maximum Credits: 3
The focus of the course will be to understand professional project management in achieving strategic organizational objectives and mitigating risks. The process for obtaining professional project management (PMP) certification will be the foundation. The six domains of project management that will be addressed include: initiating the project, planning the project, executing the project, monitoring and controlling the project, project transition and closure, professional and social responsibility.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1035; PROG: Swanson School of Engineering

IE 1155 - DISCRETE OPTIMIZATION AND APPLICATIONS IN INFRASTRUCTURE SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Discrete optimization is a powerful modeling and computational tool in decision making, especially for critical industrial systems (e.g., transportation and energy systems). In this course, the focus will be on learning various modeling techniques, classical and popular models (including location, scheduling and transportation problems) and solution techniques (including exact and heuristic algorithms) for these models that lead to millions of dollars in savings.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1081; PLAN: Industrial Engineering

IE 1180 - OPERATIONS ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Industrial engineers apply production concepts in manufacturing, retail, and healthcare settings. In today's increasingly competitive marketplace, companies must be efficient to remain in business. Many factors influence a company's efficiency but one key area is operational effectiveness. The purpose of this course is to enhance students' knowledge of several key aspects of operational effectiveness including just-in-time (JIT) and pull systems, fundamentals of factory dynamics, scheduling of machines and personnel, change management, and MRP and ERP systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: IE 1081 and 1082
IE 1201 - BIOMATERIALS AND BIOMANUFACTURING

Minimum Credits: 3  
Maximum Credits: 3

The purpose of this course is to provide students having a background in biomaterials and biomanufacturing with an opportunity to learn about the many modern aspect of biomaterials from basic science to clinical applications, across the formulations and chemistry of polymers, ceramics, metals and their use in various biomedical devices and implants, as well as their clinical performance and host responses. Students will also gain knowledge and experiences with designing and manufacturing biomedical devices through team projects. This one-semester, graduate course is intended for students majoring in the industrial engineering, or those who contemplating such a major (or minor). Students enrolled in the class should have an understanding of various biomaterials, and the ability to understand biological phenomena and manufacturing processes.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: Swanson School of Engineering

IE 1207 - SUSTAINABILITY: APPLICATIONS IN OPERATIONS RESEARCH

Minimum Credits: 3  
Maximum Credits: 3

This course covers the use of operations research techniques for the design and optimization of sustainable systems in natural resource management and other areas. Through specific examples and case studies students will learn and apply advanced operations research techniques for these problems.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: IE 1081; PROG: Swanson School of Engineering

IE 1301 - INTRODUCTION TO SAFETY ENGINEERING

Minimum Credits: 3  
Maximum Credits: 3

Introduction to Safety Engineering" provides a basis to assist students in understanding and applying the scientific and engineering principles associated with the field of safety engineering. Specifically, the course will provide a background in, information on and application exercises in the natural, chemical and physical laws and forces associated with safe design and implementation of work-related tasks and industrial and construction projects. These involve soils and excavation, trenching and shoring, permanent and temporary work platforms and scaffolding, cranes, rigging, ropes, slings and chains, fall protection, pressure vessels, confined space entry, energy isolation and preparation of equipment, hot work, welding, personal protective equipment and non-destructive testing. The course will also address safety related issues associated with building and facility design and layout, job, task and work setting layout. The course will stress the importance of safety engineering as part of both the corrective process and the design process.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: Swanson School of Engineering

IE 1302 - ENGINEERING FOR PROCESS SAFETY

Minimum Credits: 3  
Maximum Credits: 3

Engineering for process safety" provides for a basic understanding of the quantitative and qualitative analysis methods of process safety engineering and process safety management. The course also provides guidance in planning, implementing and managing an overall process safety management program. It includes coverage of such applicable science and engineering principles as risk, human reliability, fault logic, failure modes, incident cost and prediction. The course is presented in an applied format where several different types of industries are discussed such as oil and chemical, pharmaceuticals, defense, nuclear, aerospace, paper, information technology and manufacturing industries. Regulatory influence on process safety is discussed. Quantitative aspects of the course include application of risk analysis, fault tree analysis, hazard and operability analysis, vapor-cloud
dispersion modeling, human reliability analysis, failure modes and effects analysis, etc. This course is also intended to provide a background in
managing an overall system safety program and its application to several industries, therefore, cost and effectiveness measurement are covered in the
material.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

IE 2012 - MANUFACTURE OF STRUCTURAL NANOMATERIALS

Minimum Credits: 3
Maximum Credits: 3
Description: this course covers contemporary research topics on the design and manufacture of nanostructured materials. In addition to design and
manufacturing, this course would also emphasize the nanometer-scale phenomena that make nanostructured materials particularly attractive for
structural applications. Topics such as dislocation theory, large strain plasticity phenomena, super plasticity and kinetics of coarsening will be
discussed in the context of structural nanomaterials.

Academic Career: Graduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Industrial Engineering; PREQ: IE 2006

IE 2082 - LINEAR OPTIMIZATION

Minimum Credits: 3
Maximum Credits: 3
Review of linear algebra, matrices and the simplex methods; revised simplex method; generalized bounds; product form of inverse; pricing and pivot
selection; duality and sensitivity analysis; separable programming; linear complementarity; Dantzig-Wolfe decomposition; column generation;
generalized LP; semi-infinite LP, stochastic LP; interior point methods.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Engineering students only.

IE 2088 - DIGITAL SYSTEMS SIMULATION

Minimum Credits: 3
Maximum Credits: 3
Nature of simulation; discrete event simulators; modeling complex systems; input data reduction; random number generation; output data analysis;
validation of simulation models; experimental design; variance reduction techniques; comparing alternative systems; overview of simulation
languages.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Engineering students only.

IE 2097 - FINANCIAL ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
This course will focus on the structure of forwards, futures, swaps and options as financial instruments relating to the treatment of risk. Risk neutral
pricing of these instruments will be studied assisted by principles of optimization with an added emphasis on engineering analysis, and an emphasis
on "real world" applications of the "dervigem" software in accompanying CD to textbook.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Engineering students only.

IE 2725 - DESIGN FOR INJURY PREVENTION

Minimum Credits: 3
Maximum Credits: 3
This course provides instruction for how to design a workplace to prevent occupational injuries. The course will primarily focus on preventing the three types of injuries, the injury mechanism, risk factors, tools for quantifying risk and engineering solutions will be covered. Upon completion of a course, students will be expected to develop custom engineering design solutions to prevent occupational injuries. Students will complete a project where they will design a solution to eliminate or reduce an existing hazard.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade

INFSCI 0009 - MATH FOR INFORMATION SCIENCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: USCI

INFSCI 0010 - INTRODUCTION TO INFORMATION, SYSTEMS AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
Introduction to the concepts, principles, and skills of information science for students with no programming experience. Topics include: the need for information and the use of information, data collection, coding, storage and retrieval, information processing, information display, and the evaluation of information.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

INFSCI 0011 - INTRODUCTION TO INFORMATION SCIENCE ADVANCED

Minimum Credits: 3
Maximum Credits: 3
This course will introduce both information theory and the design and structure of information systems. You will learn how computers and networks work at a fundamental level. You will explore how social networks, collection of information (databases), and programming languages work. The course will spend particular attention on security and privacy issues. The course will provide you with basic skills such as building web page, programming using simple JavaScript on web pages, design and use of simple databases, and manipulation of digital media. The course meets the quantitative requirement for the college of arts & sciences, is designed for students with minimal prior technical coursework, and does not require previous programming experience.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: School of Information Science or Sch Computing and Information

INFSCI 0012 - INTRODUCTION TO PROGRAMMING

Minimum Credits: 3
Maximum Credits: 3
Introduction to concepts, principles, and skills of programming, including compilers, algorithms, and problem solving using a high level programming language such as c. Intended for students with little or no programming experience who seek an information science major.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

INFSCI 0013 - COMPUTER METHODS IN HUMANITIES

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the use of computational modeling and programming to conduct text-based research in the humanities. Course goals include 1) learning how to identify research questions in the humanities that are amenable to computational analysis and processing and 2) designing and implementing xml-based computational systems to explore those questions. No prior programming experience or knowledge of foreign languages required.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

INFSCI 0014 - CYBERSECURITY AND THE LAW

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

INFSCI 0015 - DATA STRUCTURES AND PROGRAMMING TECHNIQUES

Minimum Credits: 3
Maximum Credits: 3
Definition, description, and implementation of several information structures such as linked lists, stacks, and queues, using a scientific programming language (e.g., C).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: School of Information Science or Sch Computing and Information

INFSCI 0017 - FUNDAMENTALS OF OBJECT-ORIENTED PROGRAMMING

Minimum Credits: 4
Maximum Credits: 4
First programming course for is majors, designed for students with little or no programming experience. Basic principles and concepts of object-oriented programming using java. Classes, interfaces, operators, program control, arrays, testing, debugging, inheritance, polymorphism, and event handling. Techniques for simplifying the programming process and improving code quality. Activity-based learning.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: INFSCI 0010

INFSCI 0018 - FILE PROCESSING

Minimum Credits: 3
Maximum Credits: 3
The design of file organizations and their utilization in an integrated data processing system; utilizing COBOL programming language to implement
sequential, indexed sequential, and random access file processing systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: School of Information Science or Sch Computing and Information

INFSCI 0019 - PYTHON PROGRAMMING FOR DATA MANAGEMENT & ANALYTICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 0200 or STAT 1000 or STAT 1100 or STAT 1151 or STAT 1152 or ENGR 0020 (Min grade C or Transfer)

INFSCI 1012 - LISP AND SYMBOLIC PROGRAMMING

Minimum Credits: 3
Maximum Credits: 3
Introductions to the lisp programming language and the basic concepts of symbolic programming. Programming examples include several basic techniques used in artificial intelligence such as: search in a symbolic problem space, the use of rule based inference systems, and the representation of knowledge in frames.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: School of Information Science or Sch Computing and Information

INFSCI 1014 - GRAPHICS

Minimum Credits: 3
Maximum Credits: 3
Techniques for producing graphical displays using computers. How to design and create computer graphics. Overview of artistic and technical knowledge needed to create graphics. What makes a good graphical display will be investigated.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: INFSCI 0017 or 0015 or CS 0401

INFSCI 1017 - IMPLEMENTATION OF INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Second programming course for is majors. Advanced java language features required for professional software development. Data structures, oo design, graphical user interfaces, exception handling, multithreading, i/o, web and network programming.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: INFSCI 0017 or 0015 or CS 0401; CREQ: INFSCI 1022

INFSCI 1021 - TRENDS IN INFORMATION TECHNOLOGY MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: USCI

INFSCI 1022 - DATABASE MANAGEMENT SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
The design, implementation, and utilization of database management systems. Contrasts the methodologies of file systems, data management systems, and database management systems. Various data structures (e.g., Tree, network, linked list) and several database models (e.g., The Codasyl database task group model and the relational database model). Administrative tasks required in database management are considered.

Academic Career: Undergraduate
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: INFSCI 0010

INFSCI 1023 - INNOVATION & ENTREPRENEURSHIP IN INFORMATION TECHNOLOGY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: USCI

INFSCI 1024 - ANALYSIS OF INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
This course provides state-of-the-art skills in requirements management and scope management, which is critical for successful IT projects. Topics include best practices in eliciting, documenting, verifying and modeling requirements. This is an active learning course where students develop an analysis model for a realistic IT project which can serve as a foundation for INFSCI 1017 and INFSCI 1025. The analysis model is suitable for inclusion in the student's IT portfolio.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: INFSCI 0010

INFSCI 1025 - DESIGN OF INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Object-oriented design best practices; principles of system architecture; design patterns; requirements traceability; construction of UML-compliant models (class, sequence, communication and package diagrams); refactoring; iterative development of system prototype. Requires knowledge of fundamental oo programming concepts including abstract classes, interfaces, inheritance, polymorphism, and message passing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (INFSCI 0017 OR 0015 or CS 0401) and INFSCI 1024; CREQ: INFSCI 1022

INFSCI 1026 - MANAGEMENT OF INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
This course identifies the IT management practices that distinguish high-performing organizations and how students can leverage that knowledge to maximize their career potential. Students deliver a series of presentations on critical issues in IT management suitable for inclusion in their professional IT portfolio. Topics include leading management frameworks (e.g., CMM, COBIT, ITIL), popular agile methodologies, financial analysis techniques, and how to write a professional resume.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

INFSCI 1027 - IT PROJECT MANAGEMENT

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Project management is the discipline to manage and oversee a project from inception to completion. As more and more organizations look to launch highly competitive and disruptive technologies in the marketplace, it's critical that you can apply these methodologies, tools, and techniques to successfully manage an IT project to completion. In this course, you will acquire a working knowledge of the two more widely used project management methodologies (Agile and Waterfall) and gain hands-on experience by working through real world case studies.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREREQ: INFSCI 1024

INFSCI 1028 - GOING DIGITAL: TRANSFORMATIONAL CHANGE

**Minimum Credits:** 3  
**Maximum Credits:** 3  
New digital tools are disrupting traditional business models, forcing organizations to develop new business models and strategies that not only strengthen capabilities and drive growth, but also provide a significant competitive advantage. IT business analysts and consultants are uniquely positioned to help organizations integrate these initiatives to solve their most pressing business problems. This course is designed to build IT consulting skills that enhance critical thinking, problem solving, written and oral communication, and presentation capabilities. The course is taught through a combination of lecture, class discussions, case studies and team based projects.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

INFSCI 1029 - BUSINESS ESSENTIALS FOR THE IT PROFESSIONAL

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Changing forces in the marketplace, along with the emergence of cloud computing and smart devices, have dramatically changed the "IT landscape". These changes are having a profound impact on the industry creating extraordinary opportunities as well as unprecedented challenges for IT professionals. As an IT professional, being able to adapt to this new landscape and emerge a stronger leader requires a unique approach, as well as a unique set of decision making skills. This course will enable you to strengthen your skills in problem solving, risk management, and consultative selling which are tools needed for successful decision making.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

INFSCI 1031 - GOING DIGITAL: TRANSFORMATIONAL CHANGE

**Minimum Credits:** 3  
**Maximum Credits:** 3  
New digital tools are disrupting traditional business models, forcing organizations to develop new business models and strategies that not only strengthen capabilities and drive growth, but also provide a significant competitive advantage. IT business analysts and consultants are uniquely positioned to help organizations integrate these initiatives to solve their most pressing business problems. This course is designed to build IT
consulting skills that enhance critical thinking, problem solving, written and oral communication, and presentation capabilities. The course is taught through a combination of lecture, class discussions, case studies and team based projects.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

INFSCI 1032 - ONLINE RETRIEVAL SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
An introduction to hardware, software, and other resources required for interactive system development and the searching capabilities of an interactive textual retrieval system. Dialog, BRS and various CD-ROMs are presented as models of interactive textual retrieval systems. Students will create small databases utilizing available software.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: School of Information Science or Sch Computing and Information

INFSCI 1038 - MANAGEMENT INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
To provide students with an appreciation of the actual working environment of the typical misdepartment within the business community, including organizational structure and communication, budgeting issues, personnel issues, equipment acquisition and installation, planning for daily operations, and system evaluation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PROG: School of Information Science or Sch Computing and Information

INFSCI 1040 - INTRODUCTION TO DATA ANALYTICS

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: INFSCI 0019

INFSCI 1044 - HUMAN FACTORS IN SYSTEM DESIGN

Minimum Credits: 3
Maximum Credits: 3
Examines human-machine designs with special emphasis on human-computer interaction. Topics center on how to analyze, create, and improve equipment and environment to be compatible with human capabilities and expectations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: INFSCI 0010

INFSCI 1050 - BEHAVIORAL MODELS

Minimum Credits: 3
Maximum Credits: 3
Examines the roles of models and theories in science, and surveys several approaches to modeling cognitive and behavioral phenomena. Topics include: mathematical modeling, representational modeling, expert/novice differences and user models, psychological and computer simulation methods, the roles of analogy, metaphor, learning, and other cognitive processes in the development and use of cognitive models, and the role of models in the development of science and scientific theory.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PROG: School of Information Science or Sch Computing and Information

**INFSCI 1052 - USER CENTERED DESIGN**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Introduces principles and programming of interactive systems. Interaction techniques are surveyed and incorporated in the design of interfaces.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:**
INFSCI 1065 - INTERNET ENGINEERING

Minimum Credits: 3  
Maximum Credits: 3  
Telecommunications technologies of the internet including routing and how to use routers, real time traffic (VOIP), performance analysis, use of sniffers to collect data, differences between wired and wireless networks, use of wireless access points and performance of wireless networks, network management and SNMP software, network security and firewalls.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: INFSCI 0017 and INFSCI 1022

INFSCI 1068 - GEOSPATIAL INFORMATION SYSTEMS (GIS)

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to geographic information system (GIS) concept and technology including spatial data sources, spatial data models and structures, spatial database management, map projection systems, geocoding and Georeferencing, spatial analysis, spatial data visualization (maps), GIS applications (e.g., Address-location finding, navigation, routing), and commercial GIS software packages.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PROG: School of Information Science or Sch Computing and Information

INFSCI 1070 - INTRODUCTION TO TELECOMMUNICATIONS AND NETWORKS

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to telecommunications and networks. Top-down orientation relates networking technologies to organizational goals and needs. Data communications and internet technologies and basic system performance analysis. TCP/IP, lans, wans, internetworking, and signals and communications media.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (INFSCI 0017 or 0015 or CS 0401) and INFSCI 1022

INFSCI 1071 - APPLICATIONS OF NETWORKS

Minimum Credits: 3  
Maximum Credits: 3  
Second course in telecommunications and networks. Network architecture, protocols, performance, design, and analysis based on application needs, organizational requirements, user requirements, and performance objectives.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: CREQ: INFSCI 0010

INFSCI 1072 - INTRODUCTION TO WIRELESS NETWORKS

Minimum Credits: 3  
Maximum Credits: 3  
Second course in telecommunications and networks. Network architecture, protocols, performance, design, and analysis based on application needs, organizational requirements, user requirements, and performance objectives.
Introductory broad overview for students with a basic background in telecommunications. Not for telecom majors. Principles of wireless communications and how they differ from wired communications. Fundamental concepts including: transmission and mitigation techniques (e.g., Modulation and coding, propagation, interference and antennas) for wireless systems, multiplexing techniques, wireless system architectures, mobility management, security, protocols and location technology. Systems include: cellular phone networks (e.g., Cdma2000, umts), wireless local area networks (e.g., IEEE 802.11G), personal area networks (e.g., Bluetooth), fixed point broadband wireless (e.g., WiMAX) and satellite systems.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: INFSCI 1070 or 1004

**INFSCI 1073 - APPLICATION DEVELOPMENT FOR MOBILE DEVICES**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Learn how to solve real-world problems and experience the satisfaction of seeing a project through from start to finish. Gain hands-on experience working directly with clients and observe how senior leaders make difficult decisions. Build skills in requirements gathering, scope management and stakeholder management. Strengthen project management and interpersonal skills by working in a team based setting under the guidance of faculty. Performance will be evaluated and graded based on the overall project success and assessments from the client, faculty and student peer reviews.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (INFSCI 0017 or 0015 or CS 0401) and INFSCI 1052

**INFSCI 1074 - COMPUTER SECURITY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (INFSCI 0017 or 0015 or CS 0401) and (INFSCI 1070 or INFSCI 1004)

**INFSCI 1075 - NETWORK SECURITY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Network security and cryptographic protocols. Network vulnerabilities, attacks on TCP/IP, network monitoring, security at the link, network and transport layers. Cryptography, e.g., Secret and public key schemes, message authentication codes and key management. Wlan security, ipsec, ssl, and vps. E-mail security (ppp, s/mime); kerberos; x.509 Certificates; AAA and mobile IP; SNMP security; firewalls; filters and gateways. Policies and implementation of firewall policies; stateful firewalls; firewall appliances. Network related physical security, risk management and disaster recovery/contingency planning issues and housekeeping procedures.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (INFSCI 0017 or 0015 or CS 0401) and (INFSCI 1004 or 1070)

**INFSCI 1077 - NETWORK ANALYSIS**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Analysis of network traffic and flows and network management. Methods and tools for monitoring and analyzing network traffic and performance
including data mining and visualization. Techniques of planning, controlling, organizing, and decision making for a communications work; accounting, security, fault management, configuration, and maintenance.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: INFSCI 1070 and STAT 0200; PROG: School of Information Science or Sch Computing and Information

**INFSCI 1079 - COMPUTER NETWORKING LABORATORY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- The objective of this lab-based course is to gain knowledge of fundamental computer networking issues through hands-on experiments with network equipment and services. The sequence of labs start at the physical layer and progress up the protocol stack to the application layer. Topics covered are signal generation and analysis at the physical layer, ethernet and wlan performance and management, ip address planning and management, ip router configuration including rip, ospf, bgp, mpls protocols, tcp connection control, stateful packet filtering, network monitoring and management, signaling protocols for voip services, and web-based services configuration.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: INFSCI 1070 and 1071; PROG: School of Information Sciences or Sch Computing and Information

**INFSCI 1080 - INDEPENDENT STUDY**

- **Minimum Credits:** 1  
- **Maximum Credits:** 3  
- Development of readings, research, and practical implementation of a system or other forms of study as arranged between student and instructor.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PROG: School of Information Sciences or Sch Computing and Information; LVL: Jr or Sr

**INFSCI 1081 - TEAM-BASED CAPSTONE PROJECT**

- **Minimum Credits:** 1  
- **Maximum Credits:** 3  
- Learn how to solve real-world problems and experience the satisfaction of seeing a project through from start to finish. Gain hands-on experience working directly with clients and observe how senior leaders make difficult decisions. Build skills in requirements gathering, scope management and stakeholder management. Strengthen project management and interpersonal skills by working in a team based setting under the guidance of faculty. Performance will be evaluated and graded based on the overall project success and assessments from the client, faculty and student peer reviews.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade

**INFSCI 1082 - INFORMATION SCIENCE COOPERATIVE PROGRAM**

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
- **Academic Career:** Undergraduate  
- **Course Component:** Independent Study  
- **Grade Component:** H/S/U Basis

**INFSCI 1085 - INTERNSHIP**
Minimum Credits: 3
Maximum Credits: 3
Supervised work in an information environment providing a frame of reference for understanding and an opportunity to apply the skills, methodologies, and theories presented in information science courses.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Satisfactory/No Credit
Course Requirements: PROG: School of Information Sciences or Sch Computing and Information; LVL: Jr or Sr

INFSCI 1090 - SPECIAL TOPICS: PROGRAMMING

Minimum Credits: 3
Maximum Credits: 3
Advanced class focusing on current or specialized topic in programming area.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: Jr or Sr; PROG: School of Information Sciences or Sch Computing and Information

INFSCI 1091 - SPECIAL TOPICS: BEHAVIORAL

Minimum Credits: 3
Maximum Credits: 3
Advanced class focusing on current or specialized topic in behavioral area.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

INFSCI 1092 - SPECIAL TOPICS: SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Advanced class focusing on current or specialized topic in systems area.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: Jr or Sr; PROG: School of Information Science or Sch Computing and Information

INFSCI 1100 - STUDY ABROAD

Minimum Credits: 1
Maximum Credits: 15
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

IL 0210 - COLLEGE READING & STUDY SKILLS

Minimum Credits: 3
Maximum Credits: 3
This is a computer based course designed to provide assistance for students in achieving academic success. Course content includes self-management, vocabulary development, reading comprehension, study strategies, and preparation for examinations. Additionally, students study and practice using online databases and other resources.
Academic Career: Undergraduate
IL 1000 - INTRODUCTION TO TEACHING

Minimum Credits: 3
Maximum Credits: 3
Introduction to teaching explores contemporary perspectives of education. It provides a basic introduction to instructional planning, curriculum, and classroom management. Additionally, the class provides opportunities for practice of proven teaching strategies designed to meet individual student needs.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1041 - INTRO TO EARLY CHILDHOOD ED

Minimum Credits: 3
Maximum Credits: 3
The course is a general introduction to the theoretical, political, economic, and social issues that are inherent in the conduct and development of services for young children. The primary thrust is intended to provide students with both an overview of current issues and a basis for assessment.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1042 - LANGUAGE AND LITERATURE FOR THE YOUNG CHILD

Minimum Credits: 3
Maximum Credits: 3
An introduction to language and literacy for children birth through grade 4. Includes applied theories and stages of language development, transitions from oral to written expression, family literacy, and guidelines for the selection and use of quality literature.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

IL 1045 - YOUNG ENGLISH LANGUAGE LEARNERS

Minimum Credits: 3
Maximum Credits: 3
Prospective early childhood education teachers will identify, investigate and assess impacts of a variety of social agencies, organizations and current issues in early childhood education through planned interviews as well as class lectures, discussions and reports.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1047 - INTEGRATED CURRICULUM PRE-K - 4

Minimum Credits: 3
Maximum Credits: 3
Engagement with general and specific issues related to the development of content and lessons that cross a broad range of curricular areas for children in pre-k through grade 4.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
IL 1049 - SEMINAR RELATED TO PRE-STUDENT TEACHING PRE-K

Minimum Credits: 1
Maximum Credits: 1
This a weekly seminar that supports students during their pre-k practicum. This course is designed to facilitate student learning as they make connections between theory and practice. Students will receive guidance in the completion of required field practicum competencies and the preparation of the on-line pre-k portfolio.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

IL 1208 - READING/WRITING METHODS 1: PRE-KINDERGARTEN - GRADE 1

Minimum Credits: 3
Maximum Credits: 3
This course is intended for teacher candidates who are pursuing prek-4 certification. It is the first in a two-course sequence that focuses on classroom teaching methods for literacy. It is also part of a set of courses that focus on literacy development and instruction. Other courses in the set include reading/writing methods 2: grades 2-4, language and literature for the young child, and literacy assessment and instruction for children with disabilities in inclusive settings. Teacher candidates in reading/writing methods 1 will have opportunities to build their knowledge about specific aspects of literacy, including: (a) oral language development, (b) emergent literacy, (c) concepts about print, (d) comprehension, and (e) writing. In addition, candidates will learn about specific instructional approaches and resources for supporting students in developing those aspects of literacy in pre-kindergarten - grade 1.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1209 - READING/WRITING METHODS 2: GRADES 2-4

Minimum Credits: 3
Maximum Credits: 3
This course is intended for teacher candidates who are pursuing prek-4 certification. It is the second in a two-course sequence and builds on concepts introduced in reading/writing methods 1. It is also part of set of courses that focus on literacy development and instruction. Other courses in the set include language and literature for the young child, and literacy assessment and instruction for children with disabilities in inclusive settings. Teacher candidates in reading/writing methods 2 will have opportunities to build their knowledge about specific aspects of literacy, including: (a) word study-decoding, spelling, and vocabulary, (b) comprehension, and (d) composition, including handwriting. In addition, candidates will learn about specific instructional approaches and resources for supporting students in developing those aspects of literacy in grades 2-4.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1230 - INTRODUCTION TO INQUIRY IN ENGLISH EDUCATION

Minimum Credits: 3
Maximum Credits: 3
The course is designed to introduce students to basic issues in the teaching of writing, literature, and language with special emphasis on class discussions.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

IL 1252 - INTRO TO FOREIGN LANG EDUC

Minimum Credits: 3
Maximum Credits: 3
A basic introduction course dealing with the most current issues in foreign language education in elementary, middle and secondary schools.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**IL 1257 - TEACHING ENGLISH LANGUAGE LEARNERS**

Minimum Credits: 3  
Maximum Credits: 3  
This course will explore strategies for teaching English language learners (ELL's) in formal and informal education settings. Students will be introduced to foundational theories and current research on the social and academic factors that influence ELL's learning experiences. The class will include a video component so students can observe instructional approaches for working with linguistically and culturally diverse ELLs.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**IL 1260 - INTRO TO SOCIAL STUDIES EDUC**

Minimum Credits: 3  
Maximum Credits: 3  
A basic introductory course; primary focus is upon secondary schools as institutions in contemporary society and the role of social studies programs and teachers within this context.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**IL 1268 - SOCIAL STUDIES METHODS PRE-K - 4**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to provide a theoretical background in social studies education and to exemplify the appropriate principles and practices necessary to deliver effective social studies instruction in pre-k through grade 4.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**IL 1270 - INTEGRTG ART & MUSIC ELEM CLSSRM**

Minimum Credits: 3  
Maximum Credits: 3  
To introduce preservice classroom teachers to art and music contents and processes with relevance to their expected role in integrating authentic arts learning experiences in their instruction. Emphasis is placed on developmental aspects of children's' responsive and expressive skills in art and music.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**IL 1298 - DIRECTED STUDY**

Minimum Credits: 1  
Maximum Credits: 6  
The student proposes and carries out an independent study project under the direction and supervision of an appropriate member of the faculty.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SU3 Elective Basis
IL 1430 - INTRO TO SCIENCE EDUCATION

Minimum Credits: 3  
Maximum Credits: 3  
The goal of the course is to (a) encourage prospective teachers to become critical and reflective in thinking about science, students and the practice of teaching; and (b) provide an overview of various components of the science teaching/learning process. Course activities are structured to promote reflective thinking, and to assist students who are considering the teaching profession by providing experiences with classroom settings. The course is very intensive, requiring a good deal of reading & writing. It also requires time outside of class for observing & interviewing students.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

IL 1433 - MATH AND SCIENCE INSTRUCTION FOR YOUNG LEARNERS 1 (PRE-K-GRADE 4)

Minimum Credits: 3  
Maximum Credits: 3  
The first half of a two-semester course sequence in which pre-service teachers learn about young (pre-k through grade 4) children's thinking related to core ideas in mathematics and science and gradually, through a series of scaffolded tasks, develop pedagogical skills for designing and implementing math and science instruction.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

IL 1434 - MATH AND SCIENCE METHODS 2 (PRE-K - GRADE 4)

Minimum Credits: 3  
Maximum Credits: 3  
The second half of a two-semester course sequence in which pre-service teachers learn about young (pre-k through grade 4) children's thinking related to core ideas in mathematics and science and gradually, through a series of scaffolded tasks, develop pedagogical skills for designing and implementing math and science instruction.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

IL 1473 - MATH FOR ELEMENTARY TEACHERS

Minimum Credits: 3  
Maximum Credits: 3  
Students will improve their mathematics knowledge and skills in numeration systems, integers, rationales, geometry, probability/statistics, and other selected topics.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

IL 1479 - INTRO TO MATHEMATICS EDUC

Minimum Credits: 3  
Maximum Credits: 3  
Basic orientation to the issues, lectures, and resources in the field of mathematics education. Issues currently affecting the teaching and learning of mathematics focused on middle and secondary schooling.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade
IL 1498 - DIRECTED STUDY IN MATH & SCI ED

Minimum Credits: 1
Maximum Credits: 9
The student proposes and carries out a study project under the direction and supervision of an appropriate member of the faculty.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU Elective Basis

IL 1505 - AUTISM: CHARACTERISTICS AND INTERVENTIONS

Minimum Credits: 3
Maximum Credits: 3
This course will present information on the characteristics of and intervention approaches for children with autism spectrum disorders (ASDS). Introductory material will include diagnosis criteria and characteristics of ASDS. Current research on theories of etiology will be explored and analyzed. Screening tools and assessments specific to this population will be examined in detail. Intervention approaches (e.g. IBI/discrete trial, ABBLs, precision teaching, teach) will be described and analyzed in terms of basic premises, research base, associated curricula, and evaluative guidelines from the autism society of America and national institute of mental health. Representatives from local education and behavioral health systems serving children with ASDS will present services/intervention models available in the area.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1560 - EARLY EDUCATION OF YOUNG CHILDREN WITH DISABILITIES

Minimum Credits: 3
Maximum Credits: 3
The course focuses on (1) an overview of early childhood special education, including its rationale, historical and legal foundations, efficacy, service delivery systems, and current trends and practices; (2) the developmental assessment of young children with disabilities in the areas of motor, cognition, social-emotional, language/communication, and adaptive skills; (3) designing preschool classroom environments that meet the needs of children with disabilities through adaptations and accommodations, embedded Learning, and special instruction.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1562 - ASSESSMENT: YOUNG CHILDREN WITH DISABILITIES

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1563 - INCLUSION PRE-K

Minimum Credits: 3
Maximum Credits: 3
This course will cover the rationale, service delivery methods, teaming components, family considerations and curriculum development that are a part of inclusive pre-k settings. In addition, it will cover adaptations, accommodations, and individualized instructional strategies for creating early childhood programs that meet the needs of children without disabilities in inclusive pre-k settings.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
IL 1580 - FOUNDATIONS OF SPECIAL EDUC

Minimum Credits: 3
Maximum Credits: 3
Course provides an overview of the field of special education. It includes such topics as 1) identification; 2) placement; 3) programming; 4) inclusion; 5) advocacy; and other topics relating to individuals with disabilities, and gifted and talented individuals. The course examines the various philosophical views of Exceptionality.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1700 - EARLY FIELD EXPERIENCE-ELEM

Minimum Credits: 3
Maximum Credits: 3
Introductory field experience for undergraduate students who plan to enter the teaching profession. Offers opportunities to observe young children and assist master teachers in elementary school classrooms and early childhood education centers.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade

IL 1701 - EARLY FIELD EXPERIENCE-SECONDARY

Minimum Credits: 3
Maximum Credits: 3
This is an introductory field experience class for undergraduate students who plan to enter the teaching profession. The course provides opportunities for students to observe adolescent learners in middle and high school settings through observations in a classroom, talking with school personnel and meeting in student seminars at Pitt to reflect on what they have seen and heard. Students are provided with guidelines that will assist them in analyzing their observations.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SU3 Elective Basis

IL 1704 - CURRENT ISSUES IN SECONDARY EDUCATION

Minimum Credits: 3
Maximum Credits: 3
This course is an exploration of public schools and their programs with an emphasis on analyses of current trends, issues, influences, and problems that impact teaching theory and practice. The purpose of this course is to provide Undergraduate students with a well-rounded grounding in issues, influences, problems, and potential solutions related to 21st century learning environments. This course facilitates students' development as academics and scholars by compelling them to engage in rich readings and discourse on these and related topics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 1800 - PRE-STUDENT TEACHING PRE-K

Minimum Credits: 2
Maximum Credits: 2
Full-time practicum for teacher certification candidates. Provides opportunities to observe, plan, conduct, and evaluate instruction in the school setting and receive professional feedback from university supervisors and experienced master teachers.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: H/S/U Basis
IL 1850 - PRESCHOOL SPECIAL EDUCATION/PRIMARY LIFE SKILLS PRACTICUM

Minimum Credits: 2
Maximum Credits: 2
For this practicum, which is part of the case program, students will be placed in either a primary life skills classroom or a preschool special education program and will be mentored by a classroom teacher, co-teacher, or itinerant teacher depending on the placement. Students will be expected to complete specific requirements in these settings to fulfill state competencies and program requirements.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: H/S/U Basis

IL 1852 - SEMINAR FOR PRESCHOOL SPECIAL EDUCATION/PRIMARY LIFE SKILLS

Minimum Credits: 1
Maximum Credits: 1
Seminar for preschool special education/primary life skills practicum. This course is the seminar that accompanies the preschool special education/primary life skills practicum.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

IL 1907 - COLLABORATIVE PARTNERSHIPS WITH FAMILIES AND THE COMMUNITIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

IL 2511 - CURR PRG DVLP-LOW INCDNC DISABS

Minimum Credits: 3
Maximum Credits: 3
This course addresses program and curriculum development for students with moderate/severe disabilities. Topics include the development of assessment, instruction/curricula for the following areas: personal management, social interaction, language communication, leisure, community, vocational, and functional academics.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade

IRISH 0101 - IRISH (GAEILGE) 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

IRISH 0102 - IRISH (GAEILGE) 2
Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0221 or IRISH 0101; MIN GRADE: 'C'

IRISH 0103 - IRISH (GAEILGE) 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting are cognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0222 or IRISH 0102; MIN GRADE: 'C'

IRISH 0104 - IRISH (GAEILGE) 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0223 or IRISH 0103; MIN GRADE: 'C'

IRISH 0105 - IRISH (GAEILGE) 5

Minimum Credits: 3
Maximum Credits: 3
This course follows level 4, in which students have laid a foundation for further language learning. We now move on to more independent learning, self-discovering, reading articles, and engaging in higher level thinking. Students work on their own and in groups to dissect the mechanics of the language, rationalize texts, and make connections between grammar, natural speech, and idiomatic phrases. Students are expected to come to class enthusiastic and prepared and use this time to learn.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0224 or IRISH 0104; MIN GRADE ‘C’ FOR ALL LISTED COURSES

IRISH 0106 - IRISH (GAEILGE) 6

Minimum Credits: 3
Maximum Credits: 3
This course follows on level 5. Students will continue to break down the mechanics of the language and work towards independent success and higher level thinking. They now move to making evaluations on texts, freely expressing opinions of guided lessons, and independent discovery of grammatical structures. They are equipped for more independent learning, reading articles on culturally relevant topics, both at home and in the
community, and engaging in higher level thinking. They work on their own and in groups to dissect the mechanics of the language, rationalize the texts, and make connections between grammar, natural speech, and idiomatic phrases. Students are expected to come to class enthusiastic and prepared and use this time to learn.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: IRISH 0105; MIN GRADE 'C'

**IRISH 1615 - IRISH CULTURE AND TRADITIONS**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**IRISH 1901 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 9  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**IRISH 1905 - UNDERGRADUATE TEACHING ASSISTANT IN IRISH**

Minimum Credits: 1  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Satisfactory/No Credit

**IRISH 1909 - SPECIAL TOPICS IN IRISH**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ITAL 0001 - HERE AND NOW**

Minimum Credits: 4  
Maximum Credits: 4  
An introduction to the Italian language, including basic grammar, vocabulary and speech patterns. Primary goal is to achieve competence in the spoken language, along with basic skills in reading and writing. Face-to-face lesson meetings (3 days per week) consist of communicative activities in which students practiced learned structures and vocabulary. One hour per week is online. In this hour, students will watch/listen/read lectures, complete exercises related to grammar and vocabulary, and interact with apps and websites (Extempore, Quizlet, etc.) that will be tracked in the classroom management platform Schoology. This instructional approach is designed to allow for maximum interaction in the classroom environment, so that students can receive extensive feedback on their progress.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
ITAL 0002 - THERE AND THEN

Minimum Credits: 4  
Maximum Credits: 4  
An introduction to the Italian language, including basic grammar, vocabulary and speech patterns. Primary goal is to achieve competence in the spoken language, along with basic skills in reading and writing.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ITAL 0001 or ITAL 0101 or ITAL 0011; (MIN GRADE ‘C-’ for all courses listed)

ITAL 0003 - WHAT IF

Minimum Credits: 4  
Maximum Credits: 4  
This course is a logical continuation of the first-year sequence. Emphasis continues to be placed on the oral-aural skills, but the reading and writing skills become increasingly stressed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ITAL 0002 or ITAL 0012 or ITAL 0200; (MIN GRADE ‘C-’ for all classes listed)

ITAL 0004 - INTERMEDIATE ITALIAN 2

Minimum Credits: 3  
Maximum Credits: 3  
This course is a continuation of Italian 0003. Reading skill is emphasized even more than in Italian 0003 but continues to be accompanied by oral-aural and written work.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: ITAL 0003 or 0103(MIN GRADE ’C-’)

ITAL 0011 - ELEMN ITALIAN 1: PITT IN ITALY

Minimum Credits: 4  
Maximum Credits: 4  
An introduction to the Italian language, including basic grammar, vocabulary and speech patterns. Primary goal is to achieve competence in the spoken language, along with basic skills in reading and writing.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ITAL 0012 - ELEMENTARY ITALIAN 2: PITT IN ITALY

Minimum Credits: 4  
Maximum Credits: 4  
An introduction to the Italian language, including basic grammar, vocabulary and speech patterns. Primary goal is to achieve competence in the spoken language, along with basic skills in reading and writing.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
ITAL 0013 - MODERN AND CONTEMPORARY CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course aims to build on the skills and knowledge students have acquired in ITAL 0003 and continue their development in all aspects of Italian language, with particular emphasis on tools and strategies necessary to advance reading and writing.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 0017 - ITALIES

Minimum Credits: 3
Maximum Credits: 3
This 2nd year course consists of three main parts: Part I introduces students to the geographical contours of the Italian nation throughout history: how has Italy been defined and how is it defined today? In this part we will also identify, compare, and contrast different ways of articulating Italian identity through political, legal, cultural, economic, and linguistic parameters. Part II invites students to engage with the diversity of Italian regions-their languages, cultures, and sub-national identities-through a representative set of regional case studies. Finally, in Part III students will explore the nature of italianità (Italianness) as represented both in the diasporic movement of Italians around the world, and in current debates over immigration to Italy and the rights of immigrants—children-born in Italy-- to enjoy the benefits of Italian citizenship.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0003 with a grade of C- or better

ITAL 0050 - ITALIAN CONVERSATION

Minimum Credits: 1
Maximum Credits: 1
This course offers students the opportunity to improve their ability to converse in Italian. Discussions will center on topics of general interest.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ITAL 0055 - ITALIAN CONVERSATION AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
The course focuses on developing the students' listening and speaking proficiency in Italian by providing them opportunities to hear and speak Italian in a variety of contexts, expand their Italian vocabulary, practice different modes of communication (presentational, Interpretive and interpersonal), and learn specific verbal and non-verbal strategies to communicate successfully with others in Italian. Course work centers on a theme particularly relevant to Italian culture.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0004

ITAL 0058 - FINDING (YOUR WAY TO) ITALY

Minimum Credits: 3
Maximum Credits: 3
The aim of this fifth semester Italian course is to provide students with the means to better understand Italy, its history and culture, while experiencing Italian everyday life first-hand, in one of its major cities and regions. The course is designed to improve, in particular, students' oral proficiency and sociolinguistic competence through immersion; it consists of various sections focused on different, but complementary social and
linguistic skills pertaining to getting to know people and places, learning and discussing current Italian events, making cultural comparisons, and argue one's opinions. All the while, students will get acquainted with the city and its territory, their influential past as well as their vibrant present. Emphasis is on acquiring the authentic oral communication skills necessary to navigate expertly Italian-speaking environments, and acquiring cultural knowledge through daily, immersive and exclusive practice of the Italian language.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PREQ: ITAL 0004

**ITAL 0060 - LITERARY ITALIAN 1**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
An introduction to Italian literature and culture. The majority of readings are in the prose and poetry of modern Italian writers.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ITAL 0061 - LITERARY ITALIAN 2**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
We will read and discuss in Italian excerpts from Twentieth Century prose and poetry. The course emphasizes advanced language skills.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: ITAL 0004 (MIN GRADE 'B-')

**ITAL 0065 - INTENSIVE ADVANCED ITALIAN LANGUAGE FOR STUDY ABROAD**

- **Minimum Credits:** 6  
- **Maximum Credits:** 6  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ITAL 0080 - RENAISSANCE ITALY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
In this course we will read, in English, excerpts from the works of Italy's three greatest writers, Dante, Petrarch, and Boccaccio.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**ITAL 0081 - Made in Italy: Ingenuity, Singularity, Style**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course provides an introduction to the central themes of Italian Cultural Studies, tracing them from their origins in early modern period to the present day. Students explore Italy's unique contributions to the areas of image and style; human mobility; science, technology and design; performance and spectacle; humanism and human rights.

**Academic Career:** Undergraduate
ITAL 0086 - ITALIAN CINEMA

Minimum Credits: 3  
Maximum Credits: 3  
The course will present Italian movies from the forties to the present time. The films will provide us not only with the pleasure afforded by outstanding works of art but also with a means of assessing the central intellectual, historical, political, and economic phenomena that have shaped today's Italy.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ITAL 0087 - FOOD FOR THOUGHT: ITALIAN FOOD CULTURE

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ITAL 0088 - ITALIAN AMERICA ON SCREEN

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ITAL 0100 - ITALIAN FOR THE PROFESSIONS

Minimum Credits: 3  
Maximum Credits: 3  
This course is a content-based introduction to the Italian language for students in professional contexts, including basic grammar, vocabulary, and speech patterns. The primary goals are to achieve competence in the spoken language, along with basic skills in reading and writing, while providing students the opportunity to learn about Italian industry and commerce.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

ITAL 0101 - ITALIAN: HERE AND NOW

Minimum Credits: 4  
Maximum Credits: 4  
An introduction to the Italian language, including basic grammar, vocabulary and speech patterns. Primary goal is to achieve competence in the spoken language, along with basic skills in reading and writing. Face-to-face lesson meetings (3 days per week) consist of communicative activities in which students practiced learned structures and vocabulary. One hour per week is online. In this hour, students will watch/listen/read lectures, complete exercises related to grammar and vocabulary, and interact with apps and websites (Extempore, Quizlet, etc.) that will be tracked in the classroom management platform Schoology. This instructional approach is designed to allow for maximum interaction in the classroom environment, so that students can receive extensive feedback on their progress.

Academic Career: Undergraduate
ITAL 0102 - ITALIAN: THERE AND THEN

Minimum Credits: 4
Maximum Credits: 4
An introduction to the Italian language, including basic grammar, vocabulary and speech patterns. Primary goal is to achieve competence in the spoken language, along with basic skills in reading and writing.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0001 or ITAL 0101 or ITAL 0011; (MIN GRADE 'C-' for all courses listed)

ITAL 0103 - ITALIAN: WHAT IF

Minimum Credits: 4
Maximum Credits: 4
This course is a logical continuation of the first-year sequence. Emphasis continues to be placed on the oral-aural skills, but the reading and writing skills become increasingly stressed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0002 or ITAL 0102 or ITAL 0012 or ITAL 0200; (MIN GRADE 'C-' for all classes listed)

ITAL 0113 - MODERN AND CONTEMPORARY CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course aims to build on the skills and knowledge students have acquired in ITAL 0003 and continue their development in all aspects of Italian language, with particular emphasis on tools and strategies necessary to advance reading and writing.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 0115 - PERFORMING ITALIAN

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 0117 - ITALIES

Minimum Credits: 3
Maximum Credits: 3
This 2nd year course consists of three main parts: Part I introduces students to the geographical contours of the Italian nation throughout history: how has Italy been defined and how is it defined today? In this part we will also identify, compare, and contrast different ways of articulating Italian identity through political, legal, cultural, economic, and linguistic parameters. Part II invites students to engage with the diversity of Italian regions-their languages, cultures, and sub-national identities-through a representative set of regional case studies. Finally, in Part III students will explore the nature of Italianità (Italianness) as represented both in the diasporic movement of Italians around the world, and in current debates over immigration to Italy and the rights of immigrants-children-born in Italy-- to enjoy the benefits of Italian citizenship.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0003 with a grade of C- or better

ITAL 0200 - ITALIAN FOR THE PROFESSIONS 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: ITAL 0100 (Min Grade C'); PROG: College of Business Admin or School of Nursing or Swanson School of Engineering

ITAL 1030 - ADVANCED COMPOSITION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0060 or 0061 or 1041

ITAL 1032 - INTRODUCTION TO ITALIAN LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (ITAL 0060 or 0061 or 1041)

ITAL 1033 - READING (IN) ITALY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: (ITAL 0060 or 0061 or 1041)

ITAL 1041 - ITALIAN THEATRICAL WORKSHOP

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Requirements: PREQ: (ITAL 0060 or 0061 or 1041)
ITAL 1060 - SPECIAL TOPICS
Minimum Credits: 3
Maximum Credits: 3
Period and literary topics are to be determined by the instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0004 (MIN GRADE 'B-')

ITAL 1063 - FROM PAGE TO STAGE: THE TRADITION OF THE ACTOR-AUTHOR IN THE ITALIAN THEATER
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0060 or 0061 or 1041

ITAL 1065 - SONGS OF THE ITALIAN SELF: ITALIAN LYRIC POETRY
Minimum Credits: 3
Maximum Credits: 3
In this course we will read some of the most famous poems written in Italian, from the time of Dante and Petrarch to the present day.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0060 or 0061 or 1041

ITAL 1068 - ITALIAN NOVELLA
Minimum Credits: 3
Maximum Credits: 3
The novella is a characteristically Italian form of imaginative prose writing, with roots in medieval times. We will read works in the original, from the 1200's to the present.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0060 or 0061 or 1041

ITAL 1070 - LITERATURE AND POLITICS
Minimum Credits: 3
Maximum Credits: 3
This course will focus on the relationship between Italian literature and politics. We will pay particular attention to the ways in which literary works reflect, embrace, or question political problems, movements, or ideologies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: ITAL 0060 or 0061 or 1041

ITAL 1078 - FULBRIGHT SEMINAR IN ITALIAN STUDIES

Minimum Credits: 3
Maximum Credits: 3
The fulbright seminar in Italian studies is the spring-term undergraduate-level course offered by the visiting fulbright distinguished scholar from Italy. This course is typically offered in the fields of art history, cultural studies, film, history, literature, museum studies, political science, or urban studies.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ITAL 1079 - INTRO TO HOLOCAUST LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course surveys the central texts of the literature of the holocaust, while introducing students to the main issues and preoccupations of holocaust testimony in literature and film.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 1080 - MASTERPIECES OF ITALIAN PROSE

Minimum Credits: 3
Maximum Credits: 3
In this course we will read some of the best known pieces of Italian short fiction, from Boccaccio's Decameron and Renaissance tales to short stories of contemporary Italian writers.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 1082 - ITALIAN RENAISSANCE LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the literature of Renaissance Italy. Readings include a mixture of poetry and prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 1083 - MODERN ITALIAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
The course focuses on a half dozen masterpieces of Italian narrative and poetry. They come from different moments of Italian cultural history--the Romantic, naturalistic, decadent, and nonrealistic periods, stretching from Manzoni in the early 1800's to writers of our time.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
ITAL 1085 - DANTE, PETRARCH, AND BOCCACCIO

Minimum Credits: 3
Maximum Credits: 3
Dante, Petrarch and Boccaccio are not only the founding fathers of Italian literature but pivotal figures in Western civilization. This course will present the three writers against the historical and cultural background of pre Renaissance Europe.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 1086 - ITALIAN THEATER IN ENGLISH

Minimum Credits: 3
Maximum Credits: 3
This course will be conducted entirely in English. It will deal with both stage plays and opera in Italy from Renaissance to our times.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ITAL 1088 - TOPICS ITALIAN AMERICAN STUDIES

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the new interdisciplinary field of Italian-American studies with a particular focus on how that area of scholarship can shed light on our understanding of the past century of Italian-American culture in Western Pennsylvania and Pittsburgh. The class will consider the portrayal of Italian-Americans in literature and film from the interconnected perspectives of literary-historical interpretation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 1089 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
Period and literary topics are determined by the instructor.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ITAL 1092 - ITALIAN TRANSLATION WORKSHOP: FROM THEORY TO BEST PRACTICES

Minimum Credits: 3
Maximum Credits: 3
This upper-division course constitutes a reconsideration of the student's linguistic, cultural, and literary preparation in the context of translation theory and practice. Students will engage in translation work both from Italian to English and English to Italian though the former will predominate. Students will compile a translation dossier throughout the term, consisting of examples of translation work in a variety of genres and text types, and representing a number of different translation challenges. Students will work towards the goal of producing at least one translation for use by an organization, association, institution, or publication that needs translation to accomplish its mission.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

ITAL 1902 - DIRECTED STUDY
Minimum Credits: 1
Maximum Credits: 4
This course enables the student who has completed, or nearly completed, the Italian major to do research under the direction of a faculty member, on a topic of mutual interest.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

ITAL 1903 - HONORS DIRECTED RESEARCH: ITALIAN MAJORS

Minimum Credits: 1
Maximum Credits: 3
This course is offered to Italian majors who have high academic achievement, both in Italian and in general. These students are invited by the Italian faculty to engage in a research project under the direction of a faculty member with whom they have previously studied at the advanced undergraduate level.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

ITAL 1905 - INTERNSHIP IN ITALIAN

Minimum Credits: 1
Maximum Credits: 6
The student is placed in a job setting in which knowledge of Italian language and/or culture is useful.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

ITAL 1909 - UNDERGRADUATE RESEARCH ASSISTANTSHIP

Minimum Credits: 1
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Satisfactory/No Credit

JPNSE 0001 - FIRST YEAR JAPANESE 1

Minimum Credits: 5
Maximum Credits: 5
The first step in Japanese language study. The student will acquire a basic competence in speaking, understanding, reading and writing. Emphasis is placed on speaking and understanding as the student learns the sound system, basic vocabulary and essential sentence patterns. Writing will include the katakana and hiragana syllabaries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 0002 - FIRST YEAR JAPANESE 2

Minimum Credits: 5
Maximum Credits: 5
The second term in the systematic presentation of the modern standard language begun in Japanese 0001. Students will continue to develop all four skills--speaking, understanding, reading and writing with continued emphasis on content useful in everyday communications. Writing will include the syllabaries and about 50 selected kanji characters.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: JPNSE 0001 (MIN GRADE 'C-')

JPNSE 0003 - SECOND YEAR JAPANESE 1

Minimum Credits: 5
Maximum Credits: 5
The third term in the sequence of Japanese language instruction designed to increase the student's proficiency in speaking and understanding of modern standard Japanese through the introduction of more complex grammatical structures and idiomatic expressions. Writing will include about 300 additional kanji characters.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: JPNSE 0002 or JPNSE 1061 (MIN GRADE 'C-')

JPNSE 0004 - SECOND YEAR JAPANESE 2

Minimum Credits: 5
Maximum Credits: 5
The fourth term in the sequence of Japanese language instruction designed to develop the student's ability to carry on non-technical conversations while continuing to enhance the reading and writing skills. More complex grammatical structures and the study of about 300 additional characters are introduced.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: JPNSE 0003 (MIN GRADE 'C-')

JPNSE 0006 - JAPAN: ITS PEOPLE AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course is designed for students studying abroad in Japan. It is intended to introduce students to the people and culture of Japan in a meaningful way. Designed as a gateway to more specialized training, this is a course for students who have had little or no previous knowledge of Japan.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

JPNSE 0007 - JAPANESE CULTURE AND CIVILIZATION

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to fundamental characteristics of the culture and civilization of Japan from earliest times to the present. As a gateway to more specialized training, it is designed for students having little or no previous knowledge of Japan. Students can expect to leave with a basic grasp of important historical periods, an appreciation of key figures and places of cultural significance, and an awareness of important social changes from earliest times to the present day. Students will improve their analytical skills as they read from outstanding examples of Japanese literature; they will synthesize relevant information about Japanese art, architecture, religion, literature, society, and history from lectures and background readings in order to present well-reasoned arguments about Japan; and they will develop a nuanced understanding of Japan's place in a global context. This course aims to a) improve cultural literacy about Japan and the Japanese, b) increase familiarity with principal historical periods, c) introduce basic geography: location of principal Asian countries, Japanese islands, and Japanese cities, and d) identify important political, social, cultural, artistic, and literary themes for each of the principal periods covered.

Academic Career: Undergraduate
JPNSE 0032 - ELEMENTARY JAPANESE 2 FOR MBA

Minimum Credits: 2  
Maximum Credits: 2  
The student will continue to develop the skills of speaking, reading and writing begun in 0031. Special emphasis will again be on content useful in everyday communication.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JPNSE 0080 - CITY LIFE AND EAST ASIAN CULTURE

Minimum Credits: 3  
Maximum Credits: 3  
This is a humanities based modular course designed as an introduction to important areas of East Asian civilization. The student will discover how literature, art and thought has flourished in the urban areas of China and Japan.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JPNSE 0081 - EAST ASIA IN THE WORLD

Minimum Credits: 3  
Maximum Credits: 3  
To enhance a greater understanding of East Asian cultures; to explore the interactions and relations between the peoples and cultures of East Asia (China and Japan) and the rest of the world, from ancient times to the present. Literary works, memoirs, autobiographies, diaries, historical records and films will be used. Themes involve such topics as the significance of travel in self-understanding, diaspora, immigration, and changing ideas of the homeland.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JPNSE 0083 - INTRODUCTION TO JAPANESE LITERATURE

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces, through English translations, some of the outstanding works which make up the literary heritage of Japan. The student becomes acquainted with a non-Western literary tradition by exploring similarities and differences in ways of thinking and modes of expression. Readings include selections from ancient poetry, classical Romances, forms of drama, early modern fiction, haiku poetry and modern novels.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JPNSE 0085 - JAPANESE TALES OF THE SUPERNATURAL

Minimum Credits: 3  
Maximum Credits: 3  
This course will look at a broad array of fictional works that deal with the supernatural in Japan. The material is arranged historically, ranging from the seventh century to contemporary times, and including ancient myths, theater and narrative fiction, poetry, picture-books, film and anime. The ostensible purpose of the course is to provide a broad view of Japanese literature and culture from a particular angle—the representation of the supernatural. However, by looking at the non-human and the non-natural, students are also encouraged to think about human society and...
individuality in different historical periods in Japan.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JPNSE 1011 - BASIC JAPANESE LANGUAGE 1

Minimum Credits: 5  
Maximum Credits: 5  
The first is a series of courses in modern standard Japanese designed for the student with no previous knowledge of the language. Emphasis is on speaking and understanding and includes useful expressions and practical vocabulary.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JPNSE 1012 - BASIC JAPANESE LANGUAGE 2

Minimum Credits: 4  
Maximum Credits: 4  
The second in a series of courses, this is a continuation of Japanese 1011. The course continues to develop the student's ability to speak and understand the language, with emphasis on conversation using everyday vocabulary and expressions.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JPNSE 1020 - THIRD YEAR JAPANESE 1

Minimum Credits: 3  
Maximum Credits: 3  
The first term of the third-year Japanese language course whose primary goal is to develop a broad competency in speaking and reading through materials of academic and cultural interests and the discussion of those materials. The selection of reading materials is made in such a way that most of the characters in the Kyooiku Kanji list is covered.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: JPNSE 0004 or JPNSE 1062 (MIN GRADE 'C-')

JPNSE 1021 - THIRD YEAR JAPANESE 2

Minimum Credits: 3  
Maximum Credits: 3  
The second term of the third year level Japanese language course and a continuation of Japanese 1020. The student further develops competency through speaking and reading materials of academic and cultural interests and through discussion of those materials.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: JPNSE 1020 (MIN GRADE 'C-')

JPNSE 1023 - ASPECTS OF THE JAPANESE LANGUAGE

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces the student to the Japanese language through a study of its structure, vocabulary and cultural heritage. Some topics discussed include word order, basic structural patterns, and particles such as WA and GA, sexism, and word formation. This course is useful for the Japanese
studies student wishing to have a deeper understanding of the language as well as the linguistics student interested in gaining knowledge of a non-Indo-European language.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: JPNSE 0002

**JPNSE 1028 - READING JAPANESE 1**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Introduce students to reading in Japanese through in-class and out of class activities and assignments for improving basic reading skills: dictionary skills, fluency with Katakana and Hiragana, character recognition and production of a total of 510 kanji, gaining fuller control of grammar, and increasing vocab. Size. Will also learn to recognize text genres and adopt appropriate reading strategies, deal effectively with unknown characters and vocabulary items, form expectations about the meaning of text, and other heuristic skills. Structure: lecture in English, directed in-class reading in a variety of text genres, reading out loud, listening comprehension work, etc.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**JPNSE 1029 - READING JAPANESE 2**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Introduce students to reading in Japanese through in-class and out of class activities and assignments for improving basic reading skills: dictionary skills, fluency with Katakana and Hiragana, character recognition and production of a total of 800 kanji, gaining fuller control of grammar, and increasing lexical demands. Students will begin reading with shorter materials, such as signs, correspondence, and recipes, with smaller grammar and lexical demands, and move on to read longer texts, such as short stories and newspaper/web articles, which require more extensive skill in reading comprehension.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**JPNSE 1035 - PRAGMATICS OF JAPANESE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will provide an introduction to the usage aspects of Japanese by reading articles on pragmatic aspects of the language. The instructor will lecture on salient points and lead discussion on specific issues and the appropriate use of the language.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**JPNSE 1040 - INTRODUCTION TO CLASSICAL JAPANESE 1**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This classical Japanese language course is studied through readings of prose and poetry texts written during and immediately after the Heian period. Literary and linguistic techniques are discussed and points of contrast with the modern language are analyzed. Also introduced are reference materials dealing with classical Japanese language and literature.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** CREQ: JPNSE 1021
**JPNSE 1045 - LANGUAGE OF JAPANESE AESTHETICS**

Minimum Credits: 3  
Maximum Credits: 3  
For over a thousand years, aesthetic values have been seen by the Japanese as central in defining the particular significance of their civilization & the driving force of these insights into the beauty of truth remains powerful even today. Learning to appreciate the development of traditional Japanese aesthetic sensibilities and their historical manifestations in a variety of art forms such as poetry & painting to theatre and folk art not only helps one to understand Japanese culture but provides a nonwestern model to consider creativity, beauty and life. Readings in English.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**JPNSE 1050 - FOURTH YEAR JAPANESE 1**

Minimum Credits: 3  
Maximum Credits: 3  
A fourth-year Japanese language course for students interested in reading news stories, editorials, journal articles and other special interest items. The goals are to increase vocabulary and to develop the ability to read unfamiliar material as a tool for future research.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: JPNSE 1021 (MIN GRADE 'C-')

**JPNSE 1051 - FOURTH YEAR JAPANESE 2**

Minimum Credits: 3  
Maximum Credits: 3  
This course is a continuation of Japanese 1050. The student continues to increase vocabulary and develop the ability to read unfamiliar materials selected from journals and newspapers.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: JPNSE 1050 (MIN GRADE 'C-')

**JPNSE 1056 - JAPANESE LITERATURE AND THE WEST**

Minimum Credits: 3  
Maximum Credits: 3  
A critical study of modern Japanese works and selected modern Western literary materials with special emphasis on intensive analysis by means of modern Western criticism. The course is designed to encourage the student to examine significant similarities and differences between Japanese and non-Japanese materials and to judge the content from an oriental as well as a Western perspective.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**JPNSE 1057 - JAPANESE CULTURE AND SOCIETY THROUGH CINEMA**

Minimum Credits: 3  
Maximum Credits: 3  
This course provides a critical study of selected international prize winning Japanese films and compares these films with Western films dealing with similar themes. The student learns to analyze and interpret films; becomes familiar with particular genres of Japanese films compared with Western; studies the history of Japanese cinema and its place in international cinematography and exposes the inter cultural benefits of judging the content of the films from oriental and Western aesthetic perspectives.  
Academic Career: Undergraduate
JPNSE 1058 - WESTERNS AND SAMURAI FILMS

Minimum Credits: 3
Maximum Credits: 3
A focus on the critical comparative study of two filmic genres--the samurai representing Japanese cinema and the Western representing American cinema. The course demonstrates the analytical processes of the film leading to its structural unity; shows the significance of both genres with respect to the history of Japanese, American and European cinema; compares approaches to films of different countries and provides the overall benefits of approaching films from an intercultural standpoint.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1059 - JAPANESE LITERATURE ON SCREEN

Minimum Credits: 3
Maximum Credits: 3
This course will investigate how literature and film treat some major ideological and socio-cultural issues in Japanese society. Readings of pre-modern tales, modern fiction and contemporary novels. Film adaptations will represent the best of Japan's postwar cinematic tradition. The course is designed for the student interested in Japanese society, culture and intellectual currents through film and literature.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1061 - INTENSIVE JAPANESE 1

Minimum Credits: 10
Maximum Credits: 10
The first step in Japanese language study. The student will acquire a basic competence in speaking, understanding, reading and writing. Emphasis is placed on speaking and understanding as the student learns the sound system, basic vocabulary and essential sentence patterns. Writing will include the katakana and hiragana syllabaries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1062 - INTENSIVE JAPANESE 2

Minimum Credits: 10
Maximum Credits: 10
Students will continue to develop all four skills begun in Japanese 1061--speaking, understanding, reading and writing with continued emphasis on content useful in everyday communications. Writing will include selected kanji characters.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: JPNSE 1061 or JPNSE 0002

JPNSE 1070 - WORLD OF JAPAN

Minimum Credits: 3
Maximum Credits: 3
Students will receive a grounding in basic principles of Japanese classical literature, poetry and aesthetics. They will read the entire text in English of the tale of the Genji and examine important works in Japanese literature composed in later periods.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1071 - THE WORLD OF JAPAN

Minimum Credits: 3
Maximum Credits: 3
This course covers the period between 1570 and 1870. Beginning with the unification of Japan under sixteenth century military war lords and ending with the collapse of the Tokugana Shoganate. Students will read selections from the major scholarly literature on the period.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1080 - GHOSTS, MASKS AND ACTORS

Minimum Credits: 3
Maximum Credits: 3
A critical study of three major dramatic genres of Japan--NOH, Bunraku and kabuki--in cultural origins. Areas to be explored are the use of masks in the world of the NOH theatre, the kabuki with its female impersonators and the near-life-size puppets of the Bunraku. Also discussed is the impact that NOH and Kabuki have had on modern Japanese and non-Japanese theatrical and film genres.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1081 - FORMS OF JAPANESE THEATRE

Minimum Credits: 3
Maximum Credits: 3
This course will provide a survey of various major forms of Japanese theatre using English language materials. Students will have access to relatively ancient forms of Japanese theatre such as Kagura and no, kabuki drama and the Bunraku puppet theatre through film and videocassette. The modern and avant-garde theatre are also accessible through translation and videocassette material. This course is designed for upper-class majors in theatre arts and non-majors in related fields.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1085 - INTRODUCTION TO EAST ASIAN CINEMA

Minimum Credits: 3
Maximum Credits: 3
This course investigates the ways in which film addresses and treats the major socio-cultural issues in modern society through a critical study of the works of Chinese and Japanese master filmmakers. The course focuses on changes in marriage and family patterns, women's roles and the plight of youth.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1700 - INTRODUCTION TO THEORY AND PRACTICE OF TRANSLATION

Minimum Credits: 3
Maximum Credits: 3
This is an introductory course that answers to a growing interest in the theory and practice of translation from Japanese to English. The genres of texts that will be dealt with include literary works of various kinds (novels, poems, children's books), magazine and newspaper articles, web posts,
manga, subtitling of anime and other videos, and texts of technical nature. Students will first learn broadly about the discipline of translation studies, including a history of translation and issues in translation (invisibility of the translator, culturally specific translatability issues, etc.). Students will then learn specific types of translation issues that come up when translating Japanese into English, using excerpts from a variety of genres as case studies. Special attention is paid to the structural differences between Japanese and English, cross-cultural differences in stylistics, writing with clarity, reference work, etc.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1800 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course aims to deepen the student's understanding of the Japanese language and sharpen language skills in areas which have traditionally been difficult to learn and to understand. This will be accomplished through reading relevant literature, examining linguistic data and by in-class discussions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
An individual study under the guidance of a department faculty member. For the student whose topic is not covered by regular course work.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

JPNSE 1906 - JAPANESE INTERNSHIP

Minimum Credits: 1
Maximum Credits: 3
This course places the student in a work setting where they can gain practical experience in a supervised training environment.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

JPNSE 1908 - DIRECTED WRITING FOR MAJORS

Minimum Credits: 1
Maximum Credits: 1
In addition to whatever written assignments are required of those enrolled in the course, this directed writing practicum provides students with an opportunity to contribute writing designed in terms of the intellectual strategies of the course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JPNSE 1999 - CAPSTONE PROJECT

Minimum Credits: 3
Maximum Credits: 3
Goal of course is to plan and complete a student-directed academic project (capstone project) that requires the command and synthesis of the knowledge and skills learned in the undergraduate career in order to analyze an intellectual problem or topic in the student's interest. The students
will plan, find and use appropriate resources, make and execute plans to bring a capstone project to fruition in consultation with the course instructor and a faculty mentor.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade  

**JS 0013 - ELEMENTARY HEBREW 1**

**Minimum Credits:** 5  
**Maximum Credits:** 5  
This course introduces students to the fundamentals of the Hebrew language. We study basic vocabulary, grammar and sentence structure, and learn to read and write Hebrew. Emphasis is learning to speak the language.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**JS 0014 - ELEMENTARY HEBREW 2**

**Minimum Credits:** 5  
**Maximum Credits:** 5  
Continuation of the introductory work begun in Hebrew 1. Students further develop their reading, writing and speaking skills with the greatest emphasis being placed on oral communication.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**JS 0025 - INTERMEDIATE HEBREW 3**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students continue to develop the skills acquired in Hebrew 2 with emphasis on speaking and on understanding the spoken language. Readings this term include short stories and articles.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**JS 0026 - INTERMEDIATE HEBREW 4**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students continue to develop their Hebrew reading and speaking skills. Sophisticated Hebrew texts are introduced.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  

**JS 0037 - ADVANCED HEBREW 5**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is for advanced level students and uses Hebrew language literature, print and electronic media, film, and TV shows. Emphasis is placed on conversation, modern Hebrew literature, and composition.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
JS 0040 - INTRODUCTION YIDDISH LANGUAGE AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

JS 0090 - MYTHOLOGY IN THE ANCIENT NEAR EAST

Minimum Credits: 3
Maximum Credits: 3
The myths of the ancient near East are among the earliest written interpretations of the world and human existence. They are also among the most enduring, although they have only been unearthed in the last 200 years. In this course, we read myths from ancient Mesopotamia, Ugarit, and Israel. We study the myths as literary works, representative of the ideas and issues of the original cultural context in which they were shaped. These myths offer insight into the religious mentality of the ancient near east, as well as societal and political issues. We examine themes such as the presentation of the life of the gods, the relationship between the human and divine worlds, the issues of mortality and immortality, existence, fertility, kingship, and ethics. The primary goal of this course is to better understand these myths as they existed and developed in their ancient settings. Of course, because the myths are expressions of human thought, we may find that in studying them we also come to better understand ourselves.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 0283 - US AND THE HOLOCAUST

Minimum Credits: 3
Maximum Credits: 3
With increasing interest in the Holocaust in Europe, this course focuses on the American side of the Atlantic - on issues of anti-Semitism and anti-immigrant sentiment in this country and on America's response to the Holocaust. We will also look at some post-holocaust issues as well.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 0625 - DETECTIVE FICTION

Minimum Credits: 3
Maximum Credits: 3
This course examines detective fiction in terms of its history, its social meaning and as a form of philosophizing. It also seeks to reveal the place and values of popular fiction in our lives.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

JS 1065 - BIBLICAL HEBREW

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the grammar, syntax and vocabulary of Biblical Hebrew.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1100 - ISRAEL IN THE BIBLICAL AGE
This course explores the history and development of the people of Israel in ancient times. What do we know about the Israelites and how do we know it? Using biblical texts and archaeological remains, students will learn about everyday life in ancient Israel, the role of class and gender, life-cycle events, religious festivals, political institutions, systems of belief, and famous personages in history and lore. The trajectory of the course will begin with the Near Eastern origins of the people, continue through the rise of the Israelite and Judahite monarchies, and end with the Second Temple commonwealth of Judea in the Persian and Hellenistic periods.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

### JS 1102 - THE HISTORY OF GOD

**Minimum Credits:** 3  
**Maximum Credits:** 3

God has a history. In the earliest days of that history, God was worshiped as one of a plethora of deities controlling various spheres of cosmic activity or the human world. Students in this course will learn about this ancient pantheon - how gods functioned in society and how their presence was experienced by those devoted to them. They will then trace the evolution of the God of Israel from a mountaintop deity of the southern Levant in the late second millennium BCE to a supreme deity worshiped by a small group of absolute monotheists based in Jerusalem in the mid-first millennium BCE. Students will become more sophisticated readers of biblical texts in the process. The sources of the Hebrew Bible reflect not a homogeneous monotheism, but rather a diverse set of belief systems tending toward henotheism or even polytheism. By appropriating and reinterpreting the religious myths of their neighbors, the Israelites arrived at a character of the divine that has proven problematic to many contemporary theologians, particularly on issues of LGBT rights, women's rights, and the environment.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Satisfactory/No Credit

### JS 1160 - JERUSALEM: HISTORY AND IMAGINATION

**Minimum Credits:** 3  
**Maximum Credits:** 3

This course examines the political, religious, and cultural history of Jerusalem, focusing primarily on Jerusalem as a concrete and conceptual phenomenon in the premodern period.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Letter Grade

### JS 1170 - ARCHAEOLOGY OF ISRAEL-PALESTINE

**Minimum Credits:** 3  
**Maximum Credits:** 3

Is archaeology in a place like Israel-Palestine an objective science? In this course, we explore how past and present are linked as nation-states and religious communities utilize the archaeological record to mold identities and to forward certain narratives. Our focus will be on the major archaeological sites of Israel-Palestine, particularly in Jerusalem and its environs. We will explore the political and religious issues that have emerged from or surround their excavation. Archaeology in the Holy Land has long been driven by a desire to shed light on-or even authenticate-the Bible, while the "exotic Orient" was explored in the 19th and early 20th centuries through western expeditions and excavations that served to further colonial interests. These religious and political motivations persist even if their manifestations have shifted with time. Through site tours, museum visits, student-led discussions, talks with local experts, and even a day participating in an archaeological excavation, students will gain direct experience with the places that have aroused controversy because of their problematic relationship to biblical and other ancient texts and/or because of their location in politically contested space.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis
JS 1210 - JEWS AND JUDAISM IN THE ANCIENT WORLD

Minimum Credits: 3
Maximum Credits: 3
This course covers the development of Classical Judaism from the Second Temple Period, beginning with the end of the Babylonian Exile in the 6th century BCE, and continues up through the emergence of Rabbinic Judaism, culminating with the redaction of the Babylonian Talmud in the 6th century CE. We cover both the major historical trends as well as the major religious developments. The course also introduces students to the major Jewish texts of both the Second Temple Period and the Rabbinic Period, emphasizing close readings of primary texts.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1220 - JEWS AND JUDAISM IN THE MEDIEVAL WORLD

Minimum Credits: 3
Maximum Credits: 3
An introduction to the facets of medieval and early modern Jewish life.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1222 - JEWISH MYSTICISM

Minimum Credits: 3
Maximum Credits: 3
Mystical traditions in Judaism through the early modern period are assessed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1227 - MEDIEVAL SPAIN

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1228 - EXODUS AND PASSOVER

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

JS 1232 - MODERN EASTERN EUROPEAN JEWRY

Minimum Credits: 3
Maximum Credits: 3
This upper level undergraduate course surveys the history of the historically most numerous portion of European Jewry from the medieval period to the present, emphasizing the modernization of east-central European Jews as minorities in the context of their host societies.

Academic Career: Undergraduate
JS 1240 - JEWS AND THE CITY

Minimum Credits: 3  
Maximum Credits: 3

Comedian Lenny Bruce riffed in 1963 that "If you live in New York or any other big city, you are Jewish. It doesn't matter even if you're Catholic; if you live in New York you're Jewish." In this course, we will discover why Lenny Bruce -- and so many other observers of Jewish life -- came to understand urbanity as a core component of the Jewish experience. We will begin our study of the Jewish encounter with urban life in the 19th century, as millions of Eastern European Jews migrated from the small villages of their birth to cities across the globe. This course will trace this Eastern European Jewish diaspora to urban destinations around the world, before training its lens on the Jewish encounter with American cities. We will pay close attention to how patterns of Jewish urbanization changed regionally and over time; how urbanization affected Jews' home-life, leisure time, religious practices and occupational choices; how differences in gender and class affected Jews' experiences in urban spaces; and how Jews interacted with other ethnic groups in diverse, urban environments. Delving into the history, built environment, and archival sources pertaining to the Jewish experience in Pittsburgh will provide us with a dynamic case study for this crucial relationship between Jews and the city.

Academic Career: Undergraduate

Course Component: Lecture

Grade Component: LG/SNC Elective Basis

JS 1241 - GENDER AND JEWISH HISTORY

Minimum Credits: 3  
Maximum Credits: 3

This course will highlight the impact of gender in modern Jewish history, revealing the divergent experiences of Jewish women and Jewish men as they adapted to the modern world. We will take an international approach to this history, tracing the ways in which circumstances in Europe, America, and the Middle East shaped how Jews understood and responded to gender roles.

Academic Career: Undergraduate

Course Component: Lecture

Grade Component: Letter Grade

JS 1250 - JEWS AND JUDAISM IN THE MODERN WORLD

Minimum Credits: 3  
Maximum Credits: 3

Here we examine the specific challenges that the modern period posed to existing Jewish life and the nature of the responses made by Judaism to those challenges.

Academic Career: Undergraduate

Course Component: Lecture

Grade Component: LG/SNC Elective Basis

JS 1252 - HOLOCAUST HISTORY AND MEMORY

Minimum Credits: 3  
Maximum Credits: 3

The holocaust - that is, the genocide of six million Jews in Nazi-occupied Europe during World War II - was a critical event of the early twentieth-century that continues to resonate today. Our historical survey will look at the holocaust primarily through the experiences of its Jewish victims, though we will discuss some of the other groups, such as the roma, disabled people, and gay men, who were also targeted and systematically murdered by the Nazis. Additionally, we will think about the perpetrators of the holocaust and the ideologies that led to the genocide, such as racism, nationalism, and antisemitism. Finally, we will move beyond the history of the holocaust to think about the ways that this event has been remembered and reconstructed by survivors, nations, institutions, museums, the arts, popular culture and the media. Looking at how institutions here in Pittsburgh commemorate the holocaust will offer us local, concrete examples of how people continue to grapple with this history.

Academic Career: Undergraduate
JS 1253 - INTRODUCTION TO HOLOCAUST LITERATURE

Minimum Credits: 3  
Maximum Credits: 3  
This course surveys the central texts of the literature of the holocaust, while introducing students to the main issues and preoccupations of holocaust testimony in literature and film.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JS 1254 - HOLOCAUST LITERATURE AND FILM

Minimum Credits: 3  
Maximum Credits: 3  
This course relies on primary cultural sources of the third Reich, especially film, but also literary, visual, architectural, musical, etc. To examine the parameters of Nazi culture. It will examine such diverse aspects as the leader principle, gender roles, racial hygiene, anti-Semitism, mass culture, propaganda, and visions of history. The cultural artifacts will be analyzed both in terms of their aesthetics as well as the social and historical context of their production.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JS 1256 - MODERN ISRAEL AND PALESTINE

Minimum Credits: 3  
Maximum Credits: 3  
We trace the history of modern Israel from the idea of the return in the second half of the 19th century through the state of Israel today.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JS 1258 - ISRAELI AND PALESTINIAN LITERATURE

Minimum Credits: 3  
Maximum Credits: 3  
Reading literature from places of conflict provides an opportunity to go beyond headlines and gain insight into the day-to-day existence, desires, imaginings, and perspectives of the people who live there. Reading literature also reveals how religious values and practices become a part of everyday culture and how those values are embraced or challenged. This course will introduce students to the literature produced by Israeli and Palestinian authors, with a focus on how contemporary issues in Israeli and Palestinian society are depicted by writers from each culture. Topics will include: how these writers construct place; the role of religious texts in literature; conflicts and community within each society; how literature helped shape an Israeli national consciousness and a Palestinian national consciousness; how Israeli and Palestinian writers imagine the other; and the role of the Shoah in Israeli literature and the Nakba in Palestinian literature. The course will equally focus on developing students' academic and reflective writing skills. Students will produce a combination of literary analysis and self-reflective writing that uses techniques of creative nonfiction. Together, these writing assignments will help students respond to both the course texts and the cultural experience of studying in Israel-Palestine.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

JS 1260 - AMERICAN JEWISH EXPERIENCE
Minimum Credits: 3
Maximum Credits: 3
We analyze the Jewish experience in America since the middle of the 18th century.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1270 - GERMANY TODAY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1272 - VIENNA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1383 - POLITICS OF CONTEMPORARY MIDDLE EAST

Minimum Credits: 3
Maximum Credits: 3
The main emphasis of the course will be on conflict and conflict resolution in the middle east. Conflict has been a constant feature of the region since 1945. This course will be primarily concerned with how and why these conflicts are generated, escalate, become protracted, and are resolved.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1475 - RELIGIOUS DIVERSITY

Minimum Credits: 3
Maximum Credits: 3
What is the best way to accommodate religious and cultural diversity within a nation-state and in civil society? How should individual rights to practice religion be balanced with communal needs? Should freedom from religion be protected as much or more than freedom of religion? These are pressing contemporary issues in many countries, including the United States, but issues of religious diversity and questions of whether and how to tolerate religious minorities have a long history. In this course, we will examine the toleration of minority religions in particular historical settings, and the issues and problems (both doctrinal and social/political) that societies grappled with as they confronted diverse religious landscapes. We will also use these historical precedents as a lens to examine contemporary examples of religious pluralism, diversity, and conflict. Case studies will mainly be drawn from pre-modern Europe and modern Europe and North America, but we will also look at Mughal and modern India and discuss religion in pre-modern China.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1644 - CHRISTIAN MUSLIMS JEWS IN THE MIDDLE AGES: CONNECTION & CONFLICT

Minimum Credits: 3
Maximum Credits: 3
The emergence of Christianity from Judaism and the implications of the relationship between Christianity and Judaism have been of critical
importance in the history of Europe and the world and both Christians and Jews continue to grapple with the theological, political, and cultural impacts of that relationship in today's world. This course surveys the relationships between Jews and Christians from the time of Jesus through the modern era, as viewed by Jews, Christians, and sometimes those in neither category. Topics include the Jewish origins of Christianity; rabbinic views of Christianity and church fathers' views of Judaism; the status of Jews and Jewish communities in the Roman empire and in medieval Europe, medieval persecution of Jews; interreligious disputations and polemics; the impact of the reformation and the enlightenment; Jewish-Christian relations in modern 'secular' states; the rise of new forms of anti-Semitism; the holocaust; and post-holocaust dialogue and new theologies of interreligious encounter. We will discuss not only the significance of Jewish-Christian interactions for European and American history but also assess Jewish-Christian relations as a case study in the broader history of religious diversity, pluralism, and conflict.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1645 - THE HISTORICAL JESUS

Minimum Credits: 3
Maximum Credits: 3
This course examines the complex and often polarized relationship between Jesus and Jews (and by extension, Christianity and Judaism) in both ancient and modern contexts. Students will interact with a wide range of primary sources centered on the figure of Jesus ‘from the Christian gospels through rabbinic discussions of Jesus to modern portrayals of Jesus and the Jews in cinema and scholarship.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

JS 1680 - HISTORY AND MEMORY IN THE JEWISH TRADITION

Minimum Credits: 3
Maximum Credits: 3
Students will be introduced to the manner in which historians have studied and understood the Jewish experience from antiquity through the modern age. The role of historical study in the formation of Jewish identity will be especially highlighted.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1681 - INVENTING ISRAEL: ZIONISM, ANTI-ZIONISM, AND POST-ZIONISM

Minimum Credits: 3
Maximum Credits: 3
In this course, we will study the origins and development of Zionism as a form of modern Jewish nationalism, the emergence of different Zionist ideological streams, and non-Zionist, anti-Zionist, and post-Zionist views of Jews and non-Jews. We will also explore Zionism as a case study of relations of religion and nationalism in modernity. This course is an opportunity to carefully study and to contextualize writings and ideas of religious and political thinkers that have been both influential and controversial. The goal is to offer students historical background to ideas and issues of contemporary importance as well as skills in interpretation and contextualization of complex texts that continue to inform public discourse.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

JS 1762 - THE GUIDE TO THE PERPLEXED

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
JS 1800 - SPECIAL TOPICS

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

JS 1900 - INTERNSHIP

Minimum Credits: 1  
Maximum Credits: 3  
Internships for credit with community organizations can be arranged.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: Satisfactory/No Credit

JS 1901 - INDEPENDENT STUDY

Minimum Credits: 1  
Maximum Credits: 4  
Jewish Studies Certificate students write their capstone thesis under this section and should register for 3 credits. Permission of the Jewish Studies coordinator is required.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis

JS 1902 - DIRECTED STUDY-UNDERGRADUATE

Minimum Credits: 1  
Maximum Credits: 4  
Students may undertake a variety of individual reading or research projects under the close supervision of a faculty member. Regular meetings are required. Permission of the Jewish Studies coordinator and the faculty member required.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

JS 1903 - DIRECTED RESEARCH-UNDERGRADUATE

Minimum Credits: 1  
Maximum Credits: 4  
Students may undertake a variety of individual research projects under the close supervision of a faculty member. Regular meetings are required. Permission of the Jewish Studies coordinator and the faculty member is required.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

JS 1904 - UNDERGRADUATE RESEARCH ASSISTANTSHIP

Minimum Credits: 1  
Maximum Credits: 4  
Students serve as an undergraduate teaching assistant under the supervision of a faculty member. 1-4 credits available depending on number of hours per week worked. Credits earned will be s/n only. Permission of the Jewish Studies coordinator and the faculty member is required.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

JS 1905 - UNDERGRADUATE TEACHING ASSISTANT

Minimum Credits: 1
Maximum Credits: 4
Students serve as an undergraduate teaching assistant in Hebrew 1 or 2 under the supervision of the language instructor. 1-4 credits available depending on number of hours per week worked. Credits earned will be s/n only. Permission of the Religious Studies DUS and the language instructor is required.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

KOREAN 0001 - FIRST YEAR KOREAN 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

KOREAN 0002 - FIRST YEAR KOREAN 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: KOREAN 0001 or 1001 (MIN GRADE ‘C-’)

KOREAN 0003 - SECOND YEAR KOREAN 1

Minimum Credits: 4
Maximum Credits: 4
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: KOREAN 0002 or 1002; MIN GRADE: ‘C’- FOR LISTED COURSES

KOREAN 0004 - SECOND YEAR KOREAN 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: KOREAN 0003 or 1003; MIN GRADE: 'C-' FOR LISTED COURSES

**KOREAN 0005 - THIRD YEAR KOREAN 1**

**Minimum Credits:** 4  
**Maximum Credits:** 4  
Students will build on previously learned material and learn increasingly complex grammar patterns and build more sophisticated vocabulary for everyday interactions in all learning skill areas: speaking, listening, reading, and writing. Will read texts that focus on Korean society and history.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: KOREAN 0004 or 1004; MIN GRADE: 'C-' FOR LISTED COURSES

**KOREAN 0006 - THIRD YEAR KOREAN 2**

**Minimum Credits:** 4  
**Maximum Credits:** 4  
Students will build on previously learned material and learn increasingly complex grammar patterns and build more sophisticated vocabulary suitable for everyday interactions, and apply them in all language skill areas (speaking, listening, reading, and writing). By reading texts that focus on Korean society and history, students will learn some representative aspects of Korean culture. Approximately two hours per week to develop aural/oral skills using a communicative method.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: KOREAN 0005 or KOREAN 1005; MIN GRADE: 'C-' FOR LISTED COURSES

**KOREAN 0007 - INTRODUCTION TO KOREAN CULTURE AND CIVILIZATION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis

**KOREAN 0070 - WORLD OF KOREA: PAST AND PRESENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Intro to Korean society/culture through study of acclaimed film "Chunhy-ang, based on famous 18thc Korean literature work, providing complex window to late Korean traditional culture, literature and performing arts. Students will acquire tools to understand diversity in aspects of many cultures, as well as a changing political system. Topics include: family structure and marriage, gender issues, class system, agricultural life of Korean society, education, relations to other neighboring cultures and various forms of art expression.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**KOREAN 0075 - INTRODUCTION TO KOREA THROUGH FILMS**
KOREAN 0084 - INTRODUCTION TO MODERN KOREAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Students examine major Korean writers from the early 20th century to the present through identifying key thematic and formal issues in modern Korean literature and to situate them within a larger historical and cultural context.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

KOREAN 1001 - FIRST YEAR KOREAN 1

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

KOREAN 1002 - FIRST YEAR KOREAN 2

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: KOREAN 0001 or 1001

KOREAN 1003 - SECOND YEAR KOREAN 1

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: KOREAN 0002 or 1002; MIN GRADE: 'C-' FOR LISTED COURSES

KOREAN 1004 - SECOND YEAR KOREAN 2

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: KOREAN 0003 or 1003; MIN GRADE: 'C-' FOR LISTED COURSES
KOREAN 1005 - THIRD YEAR KOREAN 1

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: KOREAN 0004 or 1004; MIN GRADE: 'C-' FOR LISTED COURSES

KOREAN 1006 - THIRD YEAR KOREAN 2

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: KOREAN 0005 or 1005; MIN GRADE: 'C-' FOR LISTED COURSES

KOREAN 1023 - ASPECTS OF THE KOREAN LANGUAGE

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

KOREAN 1050 - FOURTH YEAR KOREAN

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: KOREAN 0006 or 1006 (MIN GRADE 'C-')

KOREAN 1051 - FOURTH YEAR KOREAN 2

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: KOREAN 0006 or 1006 (MIN GRADE 'C-')
and culture; furthering aural comprehension of contemporary television documentaries, news and drama with decreased reliance on pedagogical aids. Course is student centered class and students will develop their knowledge of Korean lexicon (including Chinese characters of Sino-Korean) and grammar. Class will be conducted in Korean exclusively.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: KOREAN 1050 (MIN GRADE 'C-')

### KOREAN 1060 - LANGUAGE AND SOCIETY IN KOREA

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
Focus on fundamental knowledge of sociolinguistics, language variations, varieties and codes of inherent sociality cultural implements. With substantial differences between eastern and Western cultures, students will study linguistic behavior and social groups, social class, effects of gender, address and reference terms, politeness strategies and style of language form used both in English and Korean in comparative study. Materials arranged to explain and evaluate the interaction of language, society and culture, the process of how people use language to construct social meaning and how those processes influence linguistic structure as well as cross-cultural communication.  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### KOREAN 1800 - SPECIAL TOPICS

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### KOREAN 1901 - INDEPENDENT STUDY

- **Minimum Credits:** 1  
- **Maximum Credits:** 6  
Student will undertake a specific research topic regarding language, literature, or culture of Korea. Faculty will approve an independent study agreement and student will make a midterm and final report to instructor.  

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SU3 Elective Basis

### KOREAN 1906 - KOREAN INTERNSHIP

- **Minimum Credits:** 1  
- **Maximum Credits:** 3  
This course places the student in a work setting where they can gain practical experience in a supervised training environment.  

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** LG/SNC Elective Basis

### LATIN 0011 - BEGINNING LATIN 1

- **Minimum Credits:** 5  
- **Maximum Credits:** 5  
This course is the first half of a two-term sequence introducing students to the morphology and syntax of classical Latin. Its purpose is to move students as quickly as possible to the reading of simple Latin prose.
LATIN 0021 - BEGINNING LATIN 2

Minimum Credits: 5
Maximum Credits: 5
This course is the second half of a two-term sequence introducing students to the morphology and syntax of classical Latin. Its purpose is to move students as quickly as possible to the reading of simple Latin prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LATIN 0011

LATIN 0031 - MEDIEVAL LATIN AUTHORS 1 WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Writing practicum for students who are taking Latin 0030 as a writing course
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

LATIN 0210 - INTERMEDIATE LATIN: PROSE

Minimum Credits: 3
Maximum Credits: 3
In this course students consolidate their grasp of Latin grammar and develop their skills of comprehension through close reading of selected prose texts, most usually drawn from Caesar and Cicero.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LATIN 0021 or 1021

LATIN 0220 - INTERMEDIATE LATIN: VERSE

Minimum Credits: 3
Maximum Credits: 3
In this course students are introduced to Latin verse through close reading of selected portions of Virgil's Aeneid.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LATIN 0210

LATIN 1011 - BEGINNING LATIN 1

Minimum Credits: 5
Maximum Credits: 5
This course is the first half of a two-term sequence introducing students to the morphology and syntax of classical Latin. Its purpose is to move students as quickly as possible to the reading of simple Latin prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
LATIN 1021 - BEGINNING LATIN 2

Minimum Credits: 5
Maximum Credits: 5
This course is the second half of a two-term sequence introducing students to the morphology and syntax of classical Latin. Its purpose is to move students as quickly as possible to the reading of simple Latin prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LATIN 1032 - MEDIEVAL LATIN AUTHORS 2

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by medieval Latin authors. The specific authors and works vary from term to term.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LATIN 0210 or 0220

LATIN 1033 - MEDIEVAL LATIN AUTHORS 2: WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
This is the writing practicum for the course medieval Latin authors 2.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PREQ: LATIN 0210 or 0220

LATIN 1300 - LATIN AUTHORS 1

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Roman authors. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LATIN 0210 and 0220

LATIN 1301 - LATIN AUTHORS 1: WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
Writing practicum for students taking Latin 1300 as a writing course.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LATIN 0210 and 0220

LATIN 1302 - LATIN AUTHORS 2
Minimum Credits: 3  
Maximum Credits: 3  
In this course students read selected works by Roman authors. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LATIN 0210 and 0220  

LATIN 1303 - LATIN AUTHORS 2: WRITING PRACTICUM

Minimum Credits: 1  
Maximum Credits: 1  
Writing practicum for students taking Latin 1302 as a writing course.  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LATIN 0210 and 0220  

LATIN 1400 - ADVANCED READINGS IN LATIN EPIC

Minimum Credits: 3  
Maximum Credits: 3  
In this course students read selected works by Roman epic poets. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PREQ: LATIN 0220 or Equivalent (consult department)  

LATIN 1402 - ADV READINGS IN LATIN DRAMA

Minimum Credits: 3  
Maximum Credits: 3  
In this course students read selected works by Roman dramatists. The specific authors and works read vary from term to term; the course may be repeated for credit when the material covered is different.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PREQ: LATIN 1300 or 1302  

LATIN 1406 - ADVANCED READINGS IN LATIN LYRIC

Minimum Credits: 3  
Maximum Credits: 3  
In this course students read selected works by Roman lyric poets. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PREQ: LATIN 1300 or 1302  

LATIN 1420 - ADVANCED READINGS IN LATIN PHILOSOPHY
Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Roman philosophers. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: LATIN 1300 or 1302

LATIN 1422 - ADVANCED READINGS IN LATIN EPISTOLOGRAPHY

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected works by Roman epistolographers. The specific authors and works vary from term to term; the course may be repeated for credit when the material covered is different.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

LATIN 1430 - SPECIAL TOPICS IN LATIN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
In this course students read selected Greek texts. The course may be repeated for credit provided the specific material covered is different.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: LATIN 1300 or 1302

LATIN 1700 - LATIN PROSE COMPOSITION

Minimum Credits: 3
Maximum Credits: 3
This course provides students with a thorough review of Latin grammar and practice in the writing of Latin prose.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LATIN 1800 - HONORS COURSE/MAJORS

Minimum Credits: 3
Maximum Credits: 3
In this course undergraduate majors in classics who wish to graduate with honors (and are otherwise qualified) write an honors paper, usually in conjunction with a Latin reading course at the 1300 or 1400 level.
Academic Career: Undergraduate
Course Component: Thesis Research
Grade Component: Satisfactory/No Credit

LATIN 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
In this course a student undertakes independent study in Latin in consultation with a member of the faculty.
Academic Career: Undergraduate
LATIN 1902 - DIRECTED STUDY FOR UNDERGRADS

Minimum Credits: 1
Maximum Credits: 6
In this course a student undertakes directed study in Latin under the close guidance of a member of the faculty.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

LATIN 1903 - DIRECTED RESEARCH FOR UNDERGRADS

Minimum Credits: 1
Maximum Credits: 9
In this course a student undertakes directed research in the field of classical civilization under the close guidance of a member of the faculty.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

LATIN 1990 - UNDERGRADUATE TEACHING ASSISTSHIP IN LATIN

Minimum Credits: 1
Maximum Credits: 5
This course allows students to earn credits for serving as undergraduate teaching assistants in courses listed under the 'Latin' subject code. Admission requires permission of the department chair. Students may repeat for credit.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

LDRSHP 1100 - THEORIES OF LEADERSHIP

Minimum Credits: 3
Maximum Credits: 3
This course is designed to acquaint students with multiple theories and practices associated with effective leadership. In answering the question, "what is leadership," it examines such theories as situational, participative, transformational, and servant leadership. It also addresses those leadership and administrative skills and practices usually associated with effective community organization and professional management.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LDRSHP 1200 - LEADERSHIP SEMINAR

Minimum Credits: 3
Maximum Credits: 3
This course is designed to develop in students an understanding of the conceptual and practical strategies of leadership. Through the use of readings, in-class activities and guest presenters, students are exposed to four factors that play a role in the development or modification of a leader. These include: appreciation of the concept of organizational life; understanding the process of change; comprehending the impact of leadership style, delivery, and strategy; and finally, developing an awareness of individual strengths and weaknesses and how to most effectively match individual style to the leadership process. The course is required of all students pursuing the Undergraduate certificate in leadership. Students should have successfully completed both the emerging leaders program and the theories of leadership course prior to registering.
Academic Career: Undergraduate
Course Component: Seminar
LEGLST 0020 - PUBLIC LAW AND MORAL REASONING

Minimum Credits: 3  
Maximum Credits: 3  
The course is designed to provide the intellectual tools to analyze moral and legal dilemmas which face professionals in their respective fields of work, and the society in which all of us must live. The course will help students to develop the skill of moral reasoning so that they may better identify, analyze, deliberate, and resolve moral dilemmas.

LEGLST 0080 - INTRODUCTION TO LEGAL STUDIES

Minimum Credits: 3  
Maximum Credits: 3  
Provides students with an overview of the structure and operation of American law and legal systems. Offers examples of the type of topics treated in depth in substantive legal studies courses. Introduces the student to the nature, functions, limitations, and operations of law as an institution in modern society. Various jurisprudential approaches are examined, and selected problems of law, power, morality and social and economic stratification are studied. Heavy emphasis is placed on the institution. Various empirical studies of the law in action will be examined.

LEGLST 1140 - INTRODUCTION TO CRIMINAL LAW

Minimum Credits: 3  
Maximum Credits: 3  
Acquaints the student with basic principles of criminal law derived from our English common law heritage and from more recent statutory penal code revisions in the American states. Course examines the meaning of crime and of criminal responsibility; criminal complicity and conspiracy; sentencing alternatives; and the decriminalization of some offenses.

LEGLST 1141 - INTRODUCTION TO CRIMINAL PROCEDURE

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the procedural effects of criminal law, including constitutional rights, state criminal procedure, and appellate decisions and rules.

LEGLST 1150 - LAWYERS AND LEGAL PROFESSION

Minimum Credits: 3  
Maximum Credits: 3  
This course offers a multi-disciplinary examination of lawyers and their role in society, with an emphasis on the relationship of lawyers to courts, judges, clients, and other lawyers. Topics to be covered in the course include: the philosophy of advocacy, the psychological and ethical aspects of practicing law, the role of law schools in the creation of professional identity, societal attitudes towards lawyers and the legal system, the
involvement of lawyers in government, politics, and policy making, and evolving concepts of legal practice.

**LEGLST 1152 - LEGAL ISSUES IN PUBLIC SERVICE**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the impact of law on public administration and manner in which legal implications condition formulation, adoption, and the implementation of programs.

**LEGLST 1155 - LAW AND SOCIAL CHANGE**

Minimum Credits: 3  
Maximum Credits: 3  
This course investigates the interrelationships between change in society and change in legal rules. Legal change is studied as an outcome of social change; directed social change as a result of legal change, or social engineering, is also examined; and the mutual ongoing interactions between legal and social change are investigated. Classical and contemporary theories related to these areas are introduced.

**LEGLST 1210 - LAW AND POLITICS**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the relationships between law and values, law and power, law and discretion. The nature of legal reasoning is illustrated and analyzed as it is applied to statutory law, case law, and constitutional law.

**LEGLST 1230 - PSYCHOLOGY AND LAW**

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces the student to the contributions of psychiatry and psychology to the legal process. The role of the psychology expert in criminal proceedings, the problem of criminal insanity, the process of civil commitment, and the rights of those deemed to be mentally ill, are among topics to be examined. Students will be asked to read and analyze legal cases and scholarly discussions of these and other related issues. Actual observance of relevant courtroom proceedings will be arranged.

**LEGLST 1260 - LAW, LITERATURE, AND CINEMA**

Minimum Credits: 3  
Maximum Credits: 3  
This course will introduce the student to literary treatments of basic issues of law and justice. Through an examination of plays, novels, essays, and short stories, the student will be able to see competing conceptions of law, justice, and morality. Legal themes as they appear in literature can then be
used to analyze and evaluate selected areas of civil and criminal law.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LEGLST 1315 - SEX, LAW AND MARRIAGE

Minimum Credits: 3
Maximum Credits: 3
Surveys the socio-legal aspects of marriage, marital alternatives, and related modes of sexual expression. Laws in these areas have been changing dramatically, reflecting, if not causing, fundamental shifts in the values and norms surrounding intimate behavior. The following topics are covered: ceremonialized marriage, commonlaw marriage, "open" marriage, "contract" marriage, homosexual and transsexual "marriage", unwed cohabitation, annulment, separation, divorce, artificial insemination, test tube fertilization, abortion, illegitimacy, alimony and property settlements.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LEGLST 1318 - SEPARATION, DIVORCE AND CUSTODY

Minimum Credits: 3
Maximum Credits: 3
A structural analysis of the causes and consequences of divorce. The process of divorce in its various psychological, legal, economic and social components is examined. The impact of divorce on the spouses, children and relatives is discussed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LEGLST 1320 - LAW AND ENVIRONMENT

Minimum Credits: 3
Maximum Credits: 3
This course introduces the student to the role of law in regulating environmental pollution. Included will be an examination of water pollution, air pollution and noise pollution. Major federal statutes such as the national environmental protection act, and the Clean Air Act will be studied along with judicial and administrative cases and rules governing these areas. Emphasis will be upon the interaction of law, politics, economics and psychology in environment control.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LEGLST 1325 - CONSUMER LAW

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the laws governing their rights as consumers. The evolution of consumer rights is traced from the common law to our present statutes. Students are introduced to state and federal laws, among them: truth in lending act, fair debt collection practices act, fair credit reporting act, equal credit opportunity act, unfair trade practices and consumer protection law and auto mobile lemon law.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LEGLST 1326 - GLOBALIZATION AND LAW

Minimum Credits: 3
Maximum Credits: 3
This course considers the efforts underway to globalize ideas of rule of law and democracy. In the movement to promote rule of law governments, human rights, and market economies, conflicts regarding culture, identity and local politics arise. The course explores the global ideas of democracy and rule of law within the context of local identity, culture and politics of emerging nation-states.

**LEGLST 1327 - INTERNATIONAL LAW**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course focuses on the nature of international law and how it differs from law within states. Topics covered include the following: treaties, enforcement mechanisms, international courts, human rights issues, the law of war, and international law of the environment, and prospects for the future of international law.
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** Letter Grade

**LEGLST 1340 - INTRODUCTION TO CIVIL RIGHTS**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- The individual rights protected by the bill of rights form the basis for this course. Specifically, the right to privacy, sexual equality, educational equality, religious freedom, and issues surrounding freedom of the press will be studied. In addition, the civil rights of specific groups including students, blacks, Indians, poor people, mental patients, members of the armed forces, teachers and public officials will be analyzed.
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** Letter Grade

**LEGLST 1355 - EMERGING ISSUES IN LEGAL AND SOCIAL POLICY**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course explores several issues with which the law is now wrestling. Topics explored include assisted reproductive technologies, assisted suicide and right to die movements, intellectual property in the internet age, immigration law, environmental and climate change, same-sex marriage, aids law, freedom of expression and advanced communication technologies, international law and universal jurisdiction, and the future of American law. With all of these topics, we will explore how the law struggles to keep pace with advances in science and technology, as well as how the law reacts to a changing society.
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** LG/SNC Elective Basis

**LEGLST 1410 - INTRODUCTION TO LEGAL RESEARCH**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- Deals with the development of law library research skills and some basic research skills in the social sciences. It provides the students with an understanding of the law library and will assist in developing research skills through the use of primary and secondary sources of the law. The student will become familiar with the use of the University of Pittsburgh libraries and the paralegal law library collection.
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** LG/SNC Elective Basis

**LEGLST 1430 - TRIAL ADVOCACY 1**
Minimum Credits: 3  
Maximum Credits: 3  
This course examines the mechanics of American civil and criminal litigation in both nonjury and jury trials. Topics include basic case analysis, effective advocacy skills, appropriate professional conduct, trial preparation, direct and cross examination of lay witnesses, and an introduction to the legal concepts of relevance and hearsay within the context of the federal rules of evidence. Students will participate in intensive class discussions and in-class presentations.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  

LEGLST 1435 - TRIAL ADVOCACY 2  

Minimum Credits: 3  
Maximum Credits: 3  
This course further examines more advanced topics relating to the mechanics of American civil and criminal litigation in both nonjury and jury trials. Topics include the authentication and use of evidentiary exhibits such as documents, real evidence and demonstratives, the direct and cross examination of expert witnesses, character evidence, opening statements, and closing arguments. Students will participate in intensive class discussions and in-class presentations.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  

LEGLST 1900 - INTERNSHIP  

Minimum Credits: 1  
Maximum Credits: 6  
Course is supervised placement with specific agency or firm in some part of the legal system.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: Satisfactory/No Credit  

LEGLST 1901 - INDEPENDENT STUDY  

Minimum Credits: 1  
Maximum Credits: 6  
Allows advanced students to pursue topics and research of special interest which are not otherwise available. Course requires construction of plan of study of research on topics selected and approval of instructor who will supervise work.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis  

LCTL 0101 - FOREIGN LANGUAGE 1  

Minimum Credits: 4  
Maximum Credits: 4  
This course will help students learn to understand, and to express themselves creatively in both spoken and written **Language**. They will acquire basic knowledge of everyday **Language** and of the country and culture of **Country**. We will focus on building communicative competence and conversational proficiency, while simultaneously building a solid foundation in **Language** grammar, writing, listening and reading comprehension skills. Students will be expected to memorize vocabulary and utilize it in both speech and writing.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  

LCTL 0102 - FOREIGN LANGUAGE 2
Minimum Credits: 4
Maximum Credits: 4
This course will help students learn to understand, and to express themselves creatively in both spoken and written **Language**. They will acquire basic knowledge of everyday **Language** and of the country and culture of **Country**. We will focus on building communicative competence and conversational proficiency, while simultaneously building a solid foundation in **Language** grammar, writing, listening and reading comprehension skills. Students will be expected to memorize vocabulary and utilize it in both speech and writing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0101; MIN GRADE 'C'

LCTL 0103 - FOREIGN LANGUAGE 3

Minimum Credits: 3
Maximum Credits: 3
This course will help students learn to understand, and to express themselves creatively in both spoken and written **Language**. They will acquire basic knowledge of everyday **Language** and of the country and culture of **Country**. We will focus on building communicative competence and conversational proficiency, while simultaneously building a solid foundation in **Language** grammar, writing, listening and reading comprehension skills. Students will be expected to memorize vocabulary and utilize it in both speech and writing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0102; MIN GRADE: 'C'

LCTL 0104 - FOREIGN LANGUAGE 4

Minimum Credits: 3
Maximum Credits: 3
This course will help students learn to understand, and to express themselves creatively in both spoken and written **Language**. They will acquire basic knowledge of everyday **Language** and of the country and culture of **Country**. We will focus on building communicative competence and conversational proficiency, while simultaneously building a solid foundation in **Language** grammar, writing, listening and reading comprehension skills. Students will be expected to memorize vocabulary and utilize it in both speech and writing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0103; MIN GRADE: 'C'

LCTL 0171 - AYMARA 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary reading and writing skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0172 - AYMARA 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able to engage in simple conversations.
with native speakers about a limited number of everyday situations and to read and write simple material related to the situations presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LCTL 0171; MIN GRADE: 'C'

**LCTL 0173 - AYMARA 3**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and to writing as a means of consolidating and communicating the knowledge gained.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LCTL 0172; MIN GRADE: 'C'

**LCTL 0174 - AYMARA 4**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LCTL 0173; MIN GRADE: 'C'

**LCTL 0231 - DANISH 1**

**Minimum Credits:** 4  
**Maximum Credits:** 4  
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LCTL 0232 - DANISH 2**

**Minimum Credits:** 4  
**Maximum Credits:** 4  
This course will help you learn to understand, and to express yourself creatively in both spoken and written Danish. You will acquire basic knowledge of everyday Danish and of the country and culture of Denmark. We will focus on building communicative competence and conversational proficiency, while simultaneously building a solid foundation in Danish grammar, writing, listening and reading comprehension skills. You will be expected to memorize vocabulary and utilize it in both speech and writing.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LCTL 0251 - DUTCH 1**
Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0252 - DUTCH 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0251; MIN GRADE: 'C'

LCTL 0253 - DUTCH 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0252; MIN GRADE: 'C'

LCTL 0301 - FINNISH 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0371 - HAUSA 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
LCTL 0391 - HUNGARIAN 1

Minimum Credits: 4  
Maximum Credits: 4  
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

LCTL 0392 - HUNGARIAN 2

Minimum Credits: 4  
Maximum Credits: 4  
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0291 or LCTL 0391; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0393 - HUNGARIAN 3

Minimum Credits: 3  
Maximum Credits: 3  
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0292 or LCTL 0392; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0394 - HUNGARIAN 4

Minimum Credits: 3  
Maximum Credits: 3  
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0293 or LCTL 0393; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0411 - ICELANDIC 1

Minimum Credits: 4  
Maximum Credits: 4  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade
LCTL 0412 - ICELANDIC 2

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: LING 0311 or LCTL 0411; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0413 - ICELANDIC 3

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: LING 0312 or LCTL 0412; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0414 - ICELANDIC 4

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: LING 0313 or LCTL 0413; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0431 - INDONESIAN 1

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

LCTL 0432 - INDONESIAN 2

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language. To recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

LCTL 0433 - INDONESIAN 3
Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0432; MIN GRADE: 'C'

LCTL 0434 - INDONESIAN 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0433; MIN GRADE: 'C'

LCTL 0561 - NORWEGIAN 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0562 - NORWEGIAN 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0561; MIN GRADE: 'C'

LCTL 0563 - NORWEGIAN 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
LCTL 0631 - PUNJABI 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0661 - ROMANIAN 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0662 - ROMANIAN 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0661; MIN GRADE: 'C'

LCTL 0681 - SCOTTISH GAELIC 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0682 - SCOTTISH GAELIC 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able to a) engage in simple conversations
with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LCTL 0681; MIN GRADE: 'C'

**LCTL 0683 - SCOTTISH GAELIC 3**

Minimum Credits: 3  
Maximum Credits: 3  
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LCTL 0682; MIN GRADE: 'C'

**LCTL 0684 - SCOTTISH GAELIC 4**

Minimum Credits: 3  
Maximum Credits: 3  
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LCTL 0683; MIN GRADE: 'C'

**LCTL 0711 - TAGALOG 1**

Minimum Credits: 4  
Maximum Credits: 4  
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LCTL 0712 - TAGALOG 2**

Minimum Credits: 4  
Maximum Credits: 4  
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0531 or LCTL 0711; MIN GRADE: 'C' FOR LISTED COURSES

**LCTL 0713 - TAGALOG 3**

1946
Minimum Credits: 3  
Maximum Credits: 3  
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0532 or LCTL 0712; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0714 - TAGALOG 4

Minimum Credits: 3  
Maximum Credits: 3  
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LING 0532 or LCTL 0712; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0731 - TAMIL 1

Minimum Credits: 4  
Maximum Credits: 4  
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

LCTL 0732 - TAMIL 2

Minimum Credits: 4  
Maximum Credits: 4  
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: LCTL 0731; MIN GRADE: 'C'

LCTL 0733 - TAMIL 3

Minimum Credits: 3  
Maximum Credits: 3  
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.  
Academic Career: Undergraduate  
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0732; MIN GRADE: 'C'

LCTL 0751 - THAI 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0752 - THAI 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0751; MIN GRADE: 'C'

LCTL 0771 - TOK-PISIN 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0791 - URDU 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0792 - URDU 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able to engage in simple conversations...
with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: LING 0285 or LCTL 0791; MIN GRADE: 'C' FOR LISTED COURSES

**LCTL 0793 - URDU 3**

**Minimum Credits:** 3  
**Maximum Credits:** 3

The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0286 or LCTL 0792; MIN GRADE: 'C' FOR LISTED COURSES

**LCTL 0794 - URDU 4**

**Minimum Credits:** 3  
**Maximum Credits:** 3

At the end of the second term of the second year the student should be able to converse comfortably with native speakers on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0287 or LCTL 0793; MIN GRADE: 'C' FOR LISTED COURSES

**LCTL 0821 - WELSH 1**

**Minimum Credits:** 4  
**Maximum Credits:** 4

The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LCTL 0822 - WELSH 2**

**Minimum Credits:** 4  
**Maximum Credits:** 4

At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LCTL 0821; MIN GRADE: 'C'

**LCTL 0823 - WELSH 3**
Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0822; MIN GRADE: 'C'

LCTL 0824 - WELSH 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LCTL 0823; MIN GRADE: 'C'

LCTL 0841 - XHOSA 1

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0842 - XHOSA 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able to engage in simple conversations with native speakers about a limited number of situations and b) to read and write simple material related to the situations presented.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0601 or AFRCNA 0601 or LCTL 0841; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0843 - XHOSA 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0602 or AFRCNA 0602 or LCTL 0842; MIN GRADE: 'C' FOR LISTED COURSES
LCTL 0844 - XHOSA 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through of various types. More complex writing tasks will be expected at this level.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0603 or AFRCNA 0603 or LCTL 0843; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0871 - YORUBA 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LCTL 0872 - YORUBA 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0611 or AFRCNA 0025 or LCTL 0871; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0873 - YORUBA 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0612 or AFRCNA 0026 or LCTL 0872; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 0874 - YORUBA 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0613 or AFRCNA 0032 or LCTL 0873; MIN GRADE: 'C' FOR LISTED COURSES

LCTL 1901 - LANGUAGE INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

LCTL 1905 - UNDERGRADUATE LANGUAGE TEACHING ASSISTANT

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

LCTL 1909 - TOPICS IN LANGUAGE STUDY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LING 0007 - ESL WRITING INTERMEDIATE

Minimum Credits: 3
Maximum Credits: 3
This is an intermediate writing skills course for non-native speakers of English, covering (a) the process and mechanics of writing a research paper (b) composition writing, with a focus on expository writing for college work (c) selected grammar skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

LING 0008 - ESL SPEAKING AND LISTENING

Minimum Credits: 3
Maximum Credits: 3
This is an advanced conversation course for non-native speakers of English to improve speaking and listening skills while gaining experience in the organization and oral presentation of material for academic work. Pronunciation exercises are done in class, while fluency and comprehensibility are the objectives of the student led discussions and presentations. The student will also learn how to prepare and present speeches and discussions. Note-taking skills are practiced. Some language lab work is required.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

LING 0009 - ESL WRITING ADVANCED
Minimum Credits: 3
Maximum Credits: 3
This course is intended for foreign students who need work on advanced composition skills in English covering (a) the process and mechanics of writing a research paper (b) composition writing, with a focus on expository writing for college work (c) selected grammar skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

LING 0010 - ESL READING AND VOCABULARY

Minimum Credits: 3
Maximum Credits: 3
This is an advanced reading skills course for non-native speakers of English, emphasizing the type of reading required in University-level coursework. The course includes intensive reading of passages from the course text, extensive reading of academic or other material selected by the student or instructor, speed improvement and vocabulary development.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

LING 0018 - ESL ORAL TA/TF

Minimum Credits: 3
Maximum Credits: 3
In this course teaching assistants and fellows will a) strengthen their English comprehensibility and listening skill, b) develop effective teaching techniques, and c) gain an understanding of American undergraduate culture.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

LING 0131 - MODERN STANDARD ARABIC 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LING 0132 - MODERN STANDARD ARABIC 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0131; MIN GRADE: 'C'

LING 0133 - MODERN STANDARD ARABIC 3
Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Course Requirements:** PREQ: LING 0132; MIN GRADE: 'C'

**LING 0134 - MODERN STANDARD ARABIC 4**

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Course Requirements:** PREQ: LING 0133; MIN GRADE: 'C'

**LING 0135 - MODERN STANDARD ARABIC 5**

Minimum Credits: 3
Maximum Credits: 3

**LING 0136 - MODERN STANDARD ARABIC 6**

Minimum Credits: 3
Maximum Credits: 3

**LING 0931 - EUROPEAN FOREIGN LANGUAGES 1**

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Course Requirements:** PREQ: LING 0133; MIN GRADE: 'C'

**LING 000 - INTRODUCTION TO LINGUISTICS**

Minimum Credits: 3
Maximum Credits: 3
This course is a survey of general linguistics, emphasizing the theory and methodology of the traditional central areas of the field—phonetics,
phonology, morphology, and syntax- with special concentration on phonological and syntactic theories and analytical techniques. The remainder of the course will be devoted to phonetics, morphology, historical linguistics, semantics and pragmatics, sociolinguistics, and psycholinguistics.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LING 1023 - ASPECTS OF THE KOREAN LANGUAGE**

Minimum Credits: 3  
Maximum Credits: 3  
This course will examine and explore essential topics in Korean linguistics such as the Korean scripts and sounds, genetic affiliation, historical development, word structure, grammatical structure, discourse, honorific and speech styles, and first/second language acquisition. Upon completion of this course, students will i) understand how the Korean language developed, and what kind of relationship the Korean language has with other languages, ii) have an ability to critically analyze basic word, phrasal and sentence structures as well as discourse structures, iii) have a general understanding of how the Korean language works as a communication system.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LING 1025 - ASPECTS OF THE CHINESE LANGUAGE**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LING 1027 - TOPICS ON CHINESE AS A SECOND LANGUAGE**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis

**LING 1050 - COMPUTATIONAL METHODS IN THE HUMANITIES**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LING 1060 - LANGUAGE AND SOCIETY IN KOREA**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**LING 1235 - LANGUAGE, GENDER AND SOCIETY**
Minimum Credits: 3
Maximum Credits: 3
The primary objective of this course is to sensitize students to the impressions given through language and the degree to which these are sex-linked. The course addresses a number of questions relevant to gender-specific language variation, including these: does language influence the way we view our gender roles, or do our gender roles condition our language? What do gender differences in languages have to do with the maintenance of social boundaries?
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LING 1240 - LANGUAGE AND THE LAW

Minimum Credits: 3
Maximum Credits: 3
This course explores some of the ways in which linguistic science can shed light on the use and misuse of language in the legal system. After an introduction to the origins and special characteristics of written English legal language ("legalese"), we will study the layman's (non-) understanding of technical legal language; the language of persuasion (e.g. Exploitation of such linguistic features of ambiguity, implicit "rules of conversation" and socially stigmatized dialect features); and arguments for and against the participation of linguists as expert witnesses in the courtroom.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LING 1250 - HISTORY OF LANGUAGE IN AMERICA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

LING 1253 - LANGUAGE AND THE BLACK EXPERIENCE

Minimum Credits: 3
Maximum Credits: 3
English colonial expansion and pursuit of trade during the seventeenth to nineteenth centuries gave rise to a wide array of language varieties, among them the pidgin and creole varieties that arose in the plantation colonies of the Atlantic, Pacific and the Americas. In this course, we examine the languages of enslaved Africans as they are reanalyzed/reformed in these new contexts. We will confront and challenge 'common sense' beliefs/ideologies about language, race, education, and power. In particular, we will: examine of the structure, history and use of Afro-American language varieties; take a close look at the history and symbolic role of language in the lives of Blacks; examine how people's sociocultural experience is reflected in language; examine the relationships between language and social life in the African-American and Caribbean communities; and consider implications of language differences for social and educational opportunities.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

LING 1263 - CROSS-CULTURAL COMMUNICATION

Minimum Credits: 3
Maximum Credits: 3
This course is designed for those planning to work or live in a situation which serves as an interface between two or more cultural groups, and also for those who are interested in matters of language and culture. The curriculum deals with aspects of culture as they interact with language, and specific topics (e.g. Dialects; language in situations of cultural contact; and the implications of cross cultural communication differences for education policy).
Academic Career: Undergraduate
LING 1267 - ASPECTS OF SOCIOLINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
Aims at providing insights into how social relationships influence language, and how language can play a role in shaping social relationships, both in the individual and societal level. Some of the issues we will look at are; attitudes towards languages, dialects and society; social differentiations of language; black English; multilingualism; bilingual education and language planning.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LING 1269 - LINGUISTIC VARIATION AND CHANGE

Minimum Credits: 3
Maximum Credits: 3

LING 1330 - COMPUTATIONAL LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
This is a course designed to introduce students who have been exposed to linguistics to real-world applications of computational linguistics. The students will first learn the fundamentals of how computers are used to represent and process textual and spoken information. They will then be introduced to the challenges of real-world language engineering problems and learn how they are handled with the latest language technologies. The topics include: search, machine translation, document classification, spell checking, dialogue systems, speech recognition, computer-assisted language learning, and corpus building and exploration. Students will be given hands-on training on the basics of text processing and will have a chance to work with popular natural language processing application suites.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000

LING 1340 - DATA SCIENCE FOR LINGUISTS

Minimum Credits: 3
Maximum Credits: 3
Data science is a fast-growing professional and academic discipline that is highly interdisciplinary in nature. Its practice centers on domain expertise: this course will introduce linguistics majors to core methods and practices in data science as it pertains to linguistic inquiry. Students will first learn the fundamentals of structuring, manipulating and sharing various forms of linguistic data; be given hands-on training on practical aspects of data processing, including handling large quantities of text data ('big data') and creating statistical language models through machine learning; and get acquainted with the emerging field of knowledge engineering and ontology. Additionally, they will be given a chance to apply data-intensive methods to a term project of their choice. Upon successful completion of this course, students will be able to: identify the best methods for representing and analyzing linguistic data for a given purpose; transform and process linguistic data in large volumes; and understand how statistics-driven text analytics and machine learning methods operate.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 and (LING 1330 or CS 0008 or 0155)
LING 1441 - FIELD METHODS IN LINGUISTICS

Minimum Credits: 3
Maximum Credits: 4
This course is meant to simulate the experience of linguistic field work, and raise awareness about the effectiveness of specific interview techniques for acquiring linguistic data. The course will give instruction and experience in eliciting data from a speaker of non (indo) European language. Students will undertake the investigation of the phonology, some aspect of grammar, and the ethno semantic study of a taxonomically structured semantic field such as plants or animals. Students will make detailed elicitation plans in advance of their administration.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: LING 1578 and 1773 and 1777; LVL: Sr

LING 1447 - LANGUAGE, CULTURE AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
Certain cultural concerns are well-labeled linguistically: kinship, plant-names, diseases, colors, etc. The study of how such semantic fields are labeled and organized is ethnosemantics. Much of the way language is used depends on the context of speaking. Different ways of talking to different people is the subject matter of sociolinguistics. Some thoughts that we habitually think seem illogical on reflection, but it seems as if our language predisposes us to think this way. Such phenomena are addressed by the sapir-whorf hypothesis.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

LING 1520 - INTRODUCTION TO ARABIC LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
In the first half of this course, students will learn about the linguistic structure of modern standard Arabic and related dialects with a special focus on the phonology, morphology and syntax. Material in the second half of the course will focus primarily on social issues related to the Arabic language including discourse, dialectology and language variation, diglossia and language contact.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020

LING 1578 - PHONOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to the production, recognition, and transcription of speech sounds in various languages of the world, and to the patterning of these sounds in phonological systems. Emphasis is on articulatory phonetics, though there is also some discussion of acoustic and experimental phonetics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020; MIN GRAD 'B'

LING 1578 - PHONETICS AND PHONEMICS

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to the production, recognition, and transcription of speech sounds in various languages of the world, and to the patterning of these sounds in phonological systems. Emphasis is on articulatory phonetics, though there is also some discussion of acoustic and experimental phonetics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020; MIN GRAD 'B'
American descriptivist ('classical phonemic') theories, the main focus of the course will be on generative phonology. Both in and out of class, students will be expected to solve phonological problems and construct theoretical arguments.

**LING 1580 - LANGUAGE AND THE MIND**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course introduces students to the study of language as a cognitive science, focusing on the mental representations of the sounds of speech. Throughout the course we will emphasize the scientific methods used by researchers to investigate questions about the sounds of language. Because this course is multidisciplinary in nature, drawing primarily from the fields of linguistics and psychology, students will be introduced to the different methods, techniques, and technologies used by researchers in both fields.

**LING 1650 - ACQUISITION OF VARIATION**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- Upon completion of this course, students will: understand how variationist theory accounts for second language acquisition (SLA); develop a knowledge of variationist theory in order to be able to evaluate critically empirical research; be able to write a successful academic abstract; present empirical articles and original projects with clarity and to create an academic handout; apply the theoretical and methodological concepts covered in class to an original final project, which includes the creation of an elicitation task; and, develop professionally.

**LING 1682 - INTRODUCTION TO SEMANTIC THEORY**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- A survey course designed to introduce students who have been exposed to linguistics and logic to contemporary work in the theory of meaning.

**LING 1720 - STRUCTURE OF SIGN LANGUAGES**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course will focus on the linguistic structure of sign languages, drawing examples principally, though not exclusively, from American sign language (ASL). It will also highlight similarities and differences between sign languages and spoken languages. In addition to structural features, the course will cover mechanisms unique to visual/spatial languages, the use of the face and body for grammatical signals, language variation, and acquisition of sign languages.
LING 1721 - SOCIOLINGUISTICS OF SIGN LANGUAGE

Minimum Credits: 3
Maximum Credits: 3
There are various sociolinguistic topics that one must consider with respect to signed languages of the deaf. Regarding language contact, ambient languages—either signed or spoken— Influence a signed language. Less than 10% of deaf people are exposed to signed language from birth, which results in unique phenomena. Additionally, signed languages exhibit variation based on a myriad of social and geographical factors. These topics, in addition to language planning and language policy, will be addressed in this course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020

LING 1738 - LINGUISTIC STRUCTURES OF ENGLISH

Minimum Credits: 3
Maximum Credits: 3
This course is a survey of phonological, morphological, and syntactic structures of English, with an emphasis on its typologically unusual characteristics. The course will cover how English words, phrases, and sentences are put together, as well as current and historical trends that have led to English as it is used today. We will also address differences between prescriptive rules of how English "should be", and descriptive generalizations about how English actually is. Lecture format with class discussion.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000

LING 1773 - MORPHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Morphology, the study of words, is interrelated with the syntax, the phonology, the lexicon, and semantics. The purpose of this course is to develop operational competence, through problem solving and discussion, in the major aspects of morphological theory. Theoretical issues to be addressed will include lexical phonology, prosodic morphology, morphology and logical form, morphology and valence alternations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000

LING 1777 - SYNTACTIC THEORY

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction, stressing understanding of theoretical concepts, to the transformational generative approach to English sentence structure. This approach uses formal rules to produce sentences, and to explain how they are composed of phrases. The first part of the course concentrates on mechanical manipulation of systems of rules, aiming to acquaint the student with how the rules work. The second part concentrates on how syntacticians use evidence about a language to support or disconfirm their theories.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020; MIN GRAD 'B'
LING 1800 - SPECIAL TOPICS IN LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020

LING 1810 - STATISTICS FOR RESEARCH IN LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
The first goal of this course is to familiarize students with the major statistical tests, analysis strategies, and plotting conventions that are currently considered best practices in linguistics. The course accomplish these goals through a combination of reading (both of textbook chapters and empirical articles), in-class demos and hands-on practice, and homework exercises. The second goal is to make students comfortable using the R programming language for statistical computing. Assuming absolutely no prior background in statistics or programming, we will work from the ground up to turn you into a novice but proficient statistical programmer; by the end of this course, you will be able to read in your own data, perform basic data re-formatting and summary calculations, and conduct a wide variety of statistical analyses' all in R! The final goal is to get students thinking about how they can apply their new skills to their own research. In service of this goal, you will be required to write a short research paper that describes a data set you would like to work with, and that explains the statistical analyses you would perform in order to answer a small number of questions that are of interest to you.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 (MIN GRADE 'B'); PLAN: Linguistics

LING 1844 - RESEARCH METHODS

Minimum Credits: 3
Maximum Credits: 3
Upon successful completion of this course, students will have a broad knowledge of the theoretical, philosophical, ethical, and practical issues of, and possibilities for, researching language in the field of linguistics. In addition to being able to evaluate the methods used in linguistics research, students will be able to design the proper methods for their own studies and be able to articulate the reasons for choosing that methods or those methods. They will be able to design the broad outlines of the study and where and how to discover resources to fully develop those methods. They will also be able to coordinate the practical aspects of a study, such as participant recruitment, data management, and Institutional Review Board (IRB) approvals. The main goal for this course is that when students are given some linguistic question or problem, they have the experience and ability to think through appropriate research methods in order to answer such a question.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LING 1860 - INTRO TO HISTORICAL LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
A survey of the principles and methods of historical linguistics; practice in the basic techniques of historical linguistic research. The major topics to be studied are the analysis of sound change, analogic change, contact-induced language change, the relationship between variation (regional and social) and language change, the comparative method, and internal reconstruction.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1578 and 1773
LING 1873 - ACCELERATED MORPHOLOGY

Minimum Credits: 3
Maximum Credits: 3

Students in this course will: understand and define relevant concepts used to discuss morphology; explore the theoretical description of morphology; develop the ability to organize linguistic data as a first step in analysis / to apply key concepts to linguistic problems and original data; analyze complex words in languages other than English and determine the meanings of the parts; describe simply and appropriately how the derivational and/or inflectional morphemes behave in a particular language problem; compare competing analyses and provide justification for selecting one analysis over another; and, apply knowledge of morphology in reading empirical research with a critical eye, including articles that focus on a range of languages (i.e., Dutch, English, French, Frisian, German, Hungarian, Russian, Spanish, Swahili) and morphological phenomena (e.g., compounding, diminutivization, grammatical gender, number, mood, prefixation, etc.)

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020 (MIN GRADE A-); CUM GPA >/= 3.25; PLAN: Linguistics

LING 1877 - ACCELERATED SYNTACTIC THEORY

Minimum Credits: 3
Maximum Credits: 3

This course will familiarize students with theoretical approaches in classic Principles and Parameters theory and the application of these approaches to some of the defining syntactic structures of English. Students will gain: knowledge of syntactic argumentation, how evidence from data is used incrementally to argue for and against theoretical proposals; the ability to apply syntactic theory to structures in languages other than English; and, insight into alternative approaches to syntactic theory.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020 (MIN GRADE A-); CUM GPA: 3.25; PLAN: Linguistics (BA)

LING 1878 - ACCELERATED PHONETICS AND PHONEMICS

Minimum Credits: 3
Maximum Credits: 3

In this course, students will acquire the conceptual framework and the practical skills to do further work in phonetics and phonology. Students will learn about: what a sound system is; which questions drive research on speech sounds; acoustics, the acoustic signal, and how it can be represented visually and measured; the acoustics of speech production and acoustics in relation to hearing and perception; and acoustic descriptions of sounds. At the end of the course, students will study articulatory phonetics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020 (MIN GRADE A-); CUM GPA >/= 3.25; PLAN: Linguistics

LING 1879 - ACCELERATED PHONOLOGY

Minimum Credits: 3
Maximum Credits: 3

Phonology is the study of how sounds pattern in the languages of the world. Using this definition, students will try to understand what exactly people are doing when they study phonology. The course will be divided up into two main sections: In the first section, students will learn about the main concepts and analysis techniques that have traditionally formed the backbone of phonology. The focus will be on how to perform a formal phonological analysis and make a phonological argument. In the second section of the course, the focus will shift toward understanding how and why the field of phonology has evolved over time, in terms of both its subject matter and its methods. Students will work through some of the seminal texts in phonological theory and try to understand what each theory does well versus poorly. This course will help students to become better, more critical thinkers and writers.

Academic Career: Undergraduate
LING 1900 - LINGUISTICS CONSULTING/INTERNSHIP: CONNECTING LINGUISTICS TO THE COMMUNITY AND INDUSTRY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

LING 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
This course provides an opportunity for students to formally pursue work on an individual basis.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

LING 1903 - DIRECTED RESEARCH

Minimum Credits: 1
Maximum Credits: 3
This course provides a hands-on opportunity for students to learn about linguistic research. By working with faculty and graduate students on approved projects, students can gain exposure to various aspects of research processes, such as data collection, data entry, linguistic analysis, and poster presentations. Students complete literature reviews, collect and/or analyze data, and write a research report.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Satisfactory/No Credit

LING 1930 - APPLICATIONS OF LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
This course is a capstone course for undergraduate majors in linguistics. It should therefore be taken after nearly all other major requirements have been fulfilled. The topics to be covered are the crucial role a knowledge of linguistics plays in language teaching, the law (both interpretation of documents, courtroom discourse, forensic linguistics, and interpreting), communication disorders, archaeology, computational linguistics, and anthropology. Students will develop a portfolio of short papers, some of which are based on their own field research.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 1000 or CSD 1020; LVL: Junior or Senior

LING 1951 - LANGUAGES OF THE WORLD

Minimum Credits: 3
Maximum Credits: 3
This course is a survey of language classification, language structures, and language contact. It concentrates on two main questions: first, how do languages resemble, and differ from, each other in sounds, forms, and syntax? And second, what are some linguistic and sociopolitical results of
situations in which two or more languages come into contact? The context for these investigations will be a study of selected language families, both in class and in individual student projects (including some elicitation of data from native speakers of various languages).

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PSYED 1005 - TEACHING GLOBALLY AND LOCALLY IN A DIVERSE WORLD**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students will be able to apply this knowledge specifically to their teaching practice as they begin their field experiences. We will critically engage in understanding the complex factors that impact education in the United States today, with an emphasis on Urban Education. A review of past teaching policies and practices will support a better understanding of the American schooling system in the 21st Century. In the Teaching Globally and Locally in a Diverse World class pre-service teachers will: (a) discuss strategies for teaching all children in a responsive, equitable manner, (b) learn to analyze the effects that marginalization has on children, (c) investigate the impact that race, culture, and socioeconomic status have on a child’s education, and (d) review school reform and policy practices that have created various types of schools available to students in the United States. Knowing that the landscape of education is changing in the United States we will discuss the globalization of schooling in our society, along with the need for a higher technological understanding to prepare children for success in today's world.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**BUSMKT 1040 - INTRODUCTION TO MARKETING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Provides an understanding of the roles of marketing in the economy and the firm, and develops a rationale for a marketing perspective as a guide to organizational and individual actions. Topics covered are the marketing environment, strategic planning, market segmentation, product development, pricing, distribution, promotion, consumer decision-making, control, and marketing management.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: College of Business Admin; PROG: College of Business Admin; LVL: So, Jr, Sr

**BUSMKT 1041 - INTRODUCTION TO MARKETING HONORS + 1**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**BUSMKT 1411 - MARKETING RESEARCH**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Emphasizes the development of methods of decision making for marketing management. Formal tools of decision making are stressed. The collection and analysis of marketing data is viewed in the context of a management information system. Provides a common analytical framework for later courses treating specialized aspects of marketing in depth.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSMKT 1040 (MIN GRAD ‘C’) and (STAT 1000 or 1040 or 1100 or 1131 or MGMT 0024 or ECON 0204); PLAN: Accr,Fin,Gen Mgmt,Gbl Mgmt,Mrktng,Undcrd CBA,BIS,HRM,SCM

1964
BUSMKT 1422 - PRINCIPLES OF SELLING

Minimum Credits: 3
Maximum Credits: 3
Selling is universal. Everyone uses persuasive communication to "sell" products, services, ideas, opinions, or points of view. Examine and practice the techniques and use the tools examined to develop and/or improve your sales skills. Focused on business-to-business sales, the concepts will apply to negotiating mutually beneficial agreements. From customer identification thru gaining agreement and follow-up, learn to identify customer problems and develop solutions that appeal to customers and benefit your organization.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSMKT 1425 - SALES FORCE MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Responsible to implement the organization's strategic goals and create profit thru sales, the sales manager must plan, organize, implement, monitor and evaluate the sales function. The manager must assure alignment of goal, strategy, task, action and reward in the sales function to create "mutual benefit" with the customer. The manager's sales forecast drives the organization, while the sales tactics and strategies which the manager plans and oversees make those forecasts a reality. We will examine the sales management process and the evolving role of the manager.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSMKT 1426 - ADVERTISING AND SALES PROMOTION

Minimum Credits: 3
Maximum Credits: 3
Provides students with an understanding of advertising and the marketing process within which effective advertising and sales promotions are rooted. It is further designed to teach students to develop effective advertising and promotion plans. Emphasis will be placed on both theoretical and conceptual foundations and their applications to the fields of advertising and sales promotions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSMKT 1427 - PUBLIC RELATIONS MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
This course will examine how public relations fits into the strategic management of organizations and how it impacts a firm's performance. Students will develop a competence in applying public relations principles to organizational opportunities and problems, with a focus on developing sound public relations writing skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
BUSMKT 1428 - DIGITAL AND SOCIAL MEDIA MARKETING

Minimum Credits: 3  
Maximum Credits: 3
This course covers advertising, marketing, and communications strategies in the new media landscape where traditional and social media co-exist. The course will focus on 1) how social media strategies can be used effectively in marketing programs, 2) when they should/should not be used, 3) how to build them, and 4) how to measure, track, and evaluate their performance and effectiveness. This marketing strategy course will focus on analyzing, developing, implementing, and evaluating media strategies as an integral part of overall marketing strategy.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: BUSMKT 1040 (MIN GRADE 'C')

BUSMKT 1429 - MARKETING COMMUNICATIONS IN AUSTRALIA

Minimum Credits: 3  
Maximum Credits: 3
Marketing communications in Australia provides an understanding of the ways in which advertising is effectively planned to achieve the objectives set in the overall marketing plan. The concept of integrated marketing communication is introduced as an organizational tool and as a philosophy for campaign planning. Integrated marketing communication requires a total approach to planning advertising and promotions campaigns and coordinating communication strategies in support of overall brand and goods/services marketing objectives, and more broadly marketing strategy.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

BUSMKT 1430 - MARKETING COMMUNICATIONS IN BRITAIN

Minimum Credits: 3  
Maximum Credits: 3
Marketing communications in Britain provides an understanding of the ways in which advertising is effectively planned to achieve the objectives set in the overall marketing plan. Home to the second largest global agency network, WPP - London (parent of major ad agencies Ogilvy & Mather, JWT, and Young & Rubicam, and universally recognized as the center for creative and production excellence), is an ideal place to learn about the industry that is "ad-land". Viewed from the us and elsewhere, a significant proportion of British advertising has a contempt for the hard sell, an antipathy to too much research, along with a penchant for irony and parody. This course is skewed to look at and assess the practice of advertising from this standpoint.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

BUSMKT 1431 - PRODUCT DEVELOPMENT AND MANAGEMENT

Minimum Credits: 3  
Maximum Credits: 3
Addresses all stages of the product life cycle beginning with the various phases of new product development, including creativity and new product concept generation, concept testing and evaluation, pricing, demand forecasting and new product marketing strategies. Also deals with special challenges related to marketing mature products/services, improving marketing implementation effectiveness, and marketing the intangible features of products.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  

BUSMKT 1435 - SERVICES MARKETING
The focus of this course is to develop the students' skills as marketers-broadening tools learned in the intro course to include development of strategies and programs for service firms. Course utilizes problem solving techniques through presentation, discussion, and analysis of contemporary service marketing cases involving examples of consumer and business to business services in both large and small firms. The course is appropriate for 1) any student seeking a follow-up course to the basic marketing class; 2) students who plan marketing careers with service firms.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSMKT 1040 (MIN GRAD ‘C’); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSMKT 1441 - CONSUMER BEHAVIOR**

Minimum Credits: 3  
Maximum Credits: 3  
Focuses on the study of individual consumers through the integration of a wide variety of social science concepts and gaining familiarity with some of the more common techniques of consumer research methodology.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSMKT 1040 (MIN GRAD ‘C’); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSMKT 1451 - RETAIL MANAGEMENT**

Minimum Credits: 3  
Maximum Credits: 3  
Emphasizes the strategic decisions for developing an enduring store image, and the marketing policies to produce customer satisfaction through service quality. Topics covered include store location, layout and atmosphere, logistics and information systems, merchandising, vendor relations and customer services, as well as topics related to non-store retailing.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSMKT 1040 (MIN GRAD ‘C’); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSMKT 1461 - INTERNATIONAL MARKETING**

Minimum Credits: 3  
Maximum Credits: 3  
Examines the unique characteristics of global marketing and the strategic marketing decisions for effective competition in the global environment in view of the rapid integration of the global economy.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSMKT 1040 (MIN GRAD ‘C’); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSMKT 1465 - PRICING STRATEGIES & TACTICS**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate
BUSMKT 1470 - SPORTS MARKETING

Minimum Credits: 3
Maximum Credits: 3
This course will provide a framework for understanding how various marketing strategies are formulated, implemented, and evaluated in sports context. Sports have been one of the major economic activities of our modern society, and knowledge of the role marketing plays in its operation has emerged as a valuable asset to all the parties involved (e.g., firms, governments, consumers, and players). The course is organized into two themes; 1) sports as product and 2) sports as medium. The first theme focuses on the applications of marketing theories and principles to promote sports and sport related products. It puts the students in the shoes of a marketing manager of a sports related business. The second theme, on the other hand, considers sports as one of the vehicles to promote a product or service. It covers how non-sport related businesses can benefit from utilizing sports as a part of their marketing communication program. Another area that will be discussed throughout the course is the role of ethics in sports marketing. What we sell in both sports as product and sports as medium is the positive values that sports represent. Therefore, sports often serve as a platform to promote the core values of our society and introduce positive change. This unique nature of sports marketing provides us with an opportunity to integrate the business aspects of sports and ethical perspectives in its marketing. Issues such as gambling, Title IX, performance enhancing drugs, and social responsibilities of sports organizations will be discussed in length whenever it is relevant to the course material.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSMKT 1481 - BRAND MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Exposes students to a wide range of marketing problems and provides them with the analytic perspectives and strategic marketing decision tools for analyzing and solving those problems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSMKT 1485 - PROJECTS IN MARKETING

Minimum Credits: 3
Maximum Credits: 3
BUSMKT 1485 connects undergraduate marketing students with prominent commercial/government clients to develop/implement specific marketing strategies. Students receive hands-on exposure to planning, strategy, research, advertising, public relations, event planning, and budgeting. Students demonstrate oral/written presentation skills via formal presentations to representatives from the client organizations.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

BUSMKT 1490 - MARKETING INTERNSHIP

Minimum Credits: 3
Maximum Credits: 3
The marketing internship provides business credits for project assignments that augment a professional marketing work experience.

Academic Career: Undergraduate
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit

**BUSBKT 1495 - MARKETING INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
An independent study course for students desiring to pursue in greater depth a specific set of marketing issues or problems to which they have been introduced in other marketing courses. The course involves directed reading and research under the guidance of a full-time faculty member.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade

**BUSBKT 1511 - MARKETING "MADE IN ECUADOR" TO THE WORLD**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
Historically, Ecuador sits at the contact zone of the Incan and Caari culture where trade through the spine of the Andes has been active for centuries. Currently, Ecuador is in the midst of building its brand to the world and is seen as the crucible of the chocolate industry. Promotion of the Galapagos, Yasuni Park and adventure travel on wild rivers has been part of the effort to showcase the best of the country to foreign markets. Ecuador's stunning volcanic peaks and rich tropical rainforest offer some of the greatest destinations on the planet along with unique and marketable resources of foods and culture. This course is designed to give you an understanding of Ecuador's natural and cultural assets including art, chocolate, ancient cities and adventure destinations and how to best market them to the world. This will be a hands-on experience where you will make your own chocolate, pottery and help locals prepare native crops as well as design promotions and refine and position their natural and cultural offerings for the global market. This is a real world experience that will be invaluable in your career as a marketer or employee in global enterprise.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**MATH 0010 - COLLEGE ALGEBRA PART 1**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
First of a two course sequence which covers the topics of linear equations and inequalities and their graphs, quadratic equations and their graphs, and systems of equations and their graphs. This course is intended for students who need to learn elementary algebra over an extended period of time.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**MATH 0020 - COLLEGE ALGEBRA PART 2**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
Second of two courses (0010-0020) which covers polynomials, rational functions and exponential and logarithmic growth. This course is intended for students who need to learn algebra over an extended period of time.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0010

**MATH 0025 - APPLIED COLLEGE ALGEBRA**

**Minimum Credits:** 3  
**Maximum Credits:** 3
This course is designed for non-math majors or non-science majors. This course will parallel the topics in MATH 0031, but will stress real life data, problem solving and the use of technology to aid in mathematical understanding.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**MATH 0031 - ALGEBRA**

Minimum Credits: 3  
Maximum Credits: 3  
The course covers basic algebra skills. Linear, polynomial, rational, exponential, and logarithmic functions are included. Systems of linear equations are also covered.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**MATH 0032 - TRIGONOMETRY AND FUNCTIONS**

Minimum Credits: 2  
Maximum Credits: 2  
This course is designed to enable students, who have mastered algebra, to learn trigonometry. Besides trigonometry, material of graphing and polynomials is included.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0031 (MIN GRADE 'C') or MATH PLACEMENT SCORE (61 or GREATER)

**MATH 0100 - PREP FOR BUSINESS CALCULUS**

Minimum Credits: 3  
Maximum Credits: 3  
This course will increase and reinforce the student's algebra skills by emphasizing the manipulation of formulas, the graphing of functions and the extensive use of problem solving. Topics include: an algebra review, functions and their graphs, systems of linear equations and inequalities, linear programming, interests and annuities, probability, data description, limits and continuity.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**MATH 0120 - BUSINESS CALCULUS**

Minimum Credits: 4  
Maximum Credits: 4  
This course introduces the basic concepts of limits, continuity, differentiation, integration, maximization and minimization. Applications to the social sciences, especially business and economics, are stressed.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0020 or 0031 (MIN GRADE 'C') or MATH PLACEMENT SCORE (61 or GREATER)

**MATH 0125 - CALCULUS FOR BUSINESS 1**

Minimum Credits: 2  
Maximum Credits: 2  
This is the first half of a two course sequence (0125-0126). It will cover concepts such as limits, continuity, differentiation and integration.
Maximization and minimization of functions will also be covered, with emphasis placed on applications in the social sciences, especially business and economics.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0020 or 0031 (MIN GRADE 'C') or MATH PLACEMENT SCORE (61 or GREATER)

**MATH 0126 - CALCULUS FOR BUSINESS 2**

Minimum Credits: 2  
Maximum Credits: 2  
This is the second half of the two sequence course (0125 0126). It provides an introduction to calculus for students in business, economics and other social sciences.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0125

**MATH 0200 - PREP FOR SCIENTIFIC CALCULUS**

Minimum Credits: 3  
Maximum Credits: 3  
A variety of topics are studied: functions, rational functions, logarithmic and exponential functions, graphs, asymptotes, inverse, conic sections, translation and rotation of axes, trigonometric identities and equations, and possibly vectors.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0020 or 0031 (MIN GRADE 'C') or MATH PLACEMENT SCORE (61 or GREATER)

**MATH 0220 - ANALYTIC GEOMETRY AND CALCULUS 1**

Minimum Credits: 4  
Maximum Credits: 4  
This is the first of a sequence of three basic calculus courses. It covers the derivative and integral of functions of one variable and their applications.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0032 (MIN GRADE 'C') or MATH 0200 (MIN GRADE 'C') or MATH PLACEMENT SCORE (76 or GREATER)

**MATH 0230 - ANALYTIC GEOMETRY AND CALCULUS 2**

Minimum Credits: 4  
Maximum Credits: 4  
This is the second of a sequence of three basic calculus courses. It covers the calculus of transcendental functions, techniques of integration, series of numbers and functions, polar coordinates, and conic sections.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0220; MIN GRADE: 'C'

**MATH 0235 - HONORS 1 - VARIABLE CALCULUS**
Minimum Credits: 4
Maximum Credits: 4
An enriched version of MATH 0220/0230. Course will cover same topics but in greater depth and with more challenging problems, computer experimentation and applications using maple. This course is intended for honors students.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MATH 0240 - ANALYTIC GEOMETRY AND CALCULUS 3

Minimum Credits: 4
Maximum Credits: 4
This is the third of a sequence of three basic calculus courses. It covers vectors and surfaces in space and the calculus of functions of several variables including partial derivatives and multiple integrals, stokes theorem, and first order differential equations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0230 or 0235; MIN GRADE: 'C'

MATH 0245 - HONORS 1- MULTIVARIABLE CALCULUS

Minimum Credits: 4
Maximum Credits: 4
An enriched version of MATH 0240. Course will cover same topics but in greater depth and with more challenging problems and applications. This course is intended for honors students.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: MIN CUM GPA: 3.25

MATH 0250 - MATRIX THEORY & DIFFT EQUATIONS

Minimum Credits: 4
Maximum Credits: 4
The topics include matrix algebra, vector spaces, linear transformations, linear differential equations with constant coefficients, and systems of first order linear differential equations. Matrix techniques are used extensively in the differential equations part of the course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0230 (MIN GRADE 'C')

MATH 0280 - INTRO TO MATRICES & LINEAR ALG

Minimum Credits: 3
Maximum Credits: 3
The principal topics which this course will cover include vectors, matrices, determinants, linear transformations, eigenvalues and eigenvectors, and selected applications.
Academic Career: UGRD
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0220 or MATH 0235 (Min Grade 'C')

MATH 0290 - DIFFERENTIAL EQUATIONS
This course presents an introduction to the theory of differential equations from an applied perspective. Topics include linear and nonlinear ordinary differential equations, Laplace transform, and introduction to partial differential equations.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0230 or 0235; MIN GRADE: 'C'

**MATH 0400 - FINITE MATHEMATICS**

Minimum Credits: 3  
Maximum Credits: 3  
The course covers the basic concepts of set theory, logic, combinatorics, Boolean algebra, and graph theory with an orientation towards applications.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0020 or 0031 (MIN GRADE 'C') or MATH PLACEMENT SCORE (61 or GREATER)

**MATH 0413 - INTRO THEORETICAL MATHEMATICS**

Minimum Credits: 4  
Maximum Credits: 4  
This course is an introduction to the theoretical treatment of sets, functions, relations, numbers, sequences, and limits. Classwork and homework concentrate reading and writing of proofs of theorems centered on these topics.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0230 or 0235

**MATH 0420 - INTRO THEORY 1-VARIABLE CALCULUS**

Minimum Credits: 3  
Maximum Credits: 3  
The course provides a careful treatment of the theoretical concepts of limit, continuity, derivative and integral, including the fundamental theorem of calculus.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0413 or MATH 0450

**MATH 0430 - INTRO ABSTRACT ALGEBRAIC SYSTEMS**

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces the student to abstract algebraic concepts, rings, integral domains, fields, integers, rational, real and complex numbers, and polynomials. Many examples will be presented during class and in the homework. The students are expected to enhance their proof writing techniques.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0413 or 0450 or 1185

**MATH 0450 - INTRODUCTION TO ANALYSIS**
Minimum Credits: 4
Maximum Credits: 4
This course is intended as a first course in mathematical analysis for highly motivated students. Topics will include sets and functions, number systems, topology of Euclidean spaces, limits, continuity, and the main theorems of elementary calculus.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MATH 0470 - ACTUARIAL MATHEMATICS 1

Minimum Credits: 3
Maximum Credits: 3
This course will cover the material listed in the syllabus for mathematics of finance of the society of actuaries. Specifically it will present the relevant topics in the theory of interest (interest and discount rates, cash flows, annuities, amortization and sinking funds, bonds) and investment (stocks, capital asset pricing model, arbitrage pricing theory, portfolios, options). The material will be presented in the traditional academic format of lectures and help sessions along with optional sessions directed specifically at preparing students for the SOA exam.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: MATH 0230 or 0235

MATH 0500 - PROFESSIONAL DEVELOPMENT

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit
Course Requirements: PREQ: MATH 0413

MATH 1010 - PUTNAM SEMINAR

Minimum Credits: 2
Maximum Credits: 2
The aim of this course is to develop the capacity to solve mathematical problems involving a substantial element of ingenuity and perseverance. Training will involve the study of problems from previous Putnam competitions, for which this course can be regarded as a useful preparation. An attempt will be made to look for unifying mathematical ideas. General strategies for solving problems will also be discussed.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

MATH 1020 - APPLIED ELEMENTARY NUMBER THEORY

Minimum Credits: 3
Maximum Credits: 3
This course will reveal the key role played by number theory in the development of mathematics. Some applications of number theory will be covered in the course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0430

MATH 1025 - INTRODUCTION TO MATHEMATICAL CRYPTOGRAPHY

1974
The course covers the theoretical underpinnings of cryptosystems and the analysis of their limitations and vulnerabilities. Special emphasis will be placed on public key cryptosystems, including elliptic curve based systems. Real world applications such as browser security and bitcoin will be discussed.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### MATH 1050 - COMBINATORIAL MATHEMATICS

Minimum Credits: 3  
Maximum Credits: 3  
Topics covered include the binomial theorem, inclusion exclusion principle, recurrence relations, generating functions, and coloring problems.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0413 or 0450 or 1185

### MATH 1070 - NUMERICAL MATHEMATICAL ANALYSIS

Minimum Credits: 3  
Maximum Credits: 3  
This course, with MATH 1080 forms a two term introduction to numerical analysis at the advanced undergraduate level and includes interpolation, numerical differentiation and integration, solution of non-linear equations, numerical solution of systems of ordinary differential equations, and additional topics as time permits. Emphasis is on understanding the algorithms rather than on detailed coding, although some programming will be required.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0413 or 0450 or 1185

### MATH 1080 - NUMERICAL MATH: LINEAR ALGEBRA

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to numerical linear algebra which addresses numerical methods for solving linear algebraic systems and matrix Eigen problems and applications to partial differential equations. Although the course will stress a computational viewpoint, analysis of the convergences and stability of the algorithms will be investigated.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0240 or 0245

### MATH 1100 - LINEAR PROGRAMMING

Minimum Credits: 3  
Maximum Credits: 3  
Topics covered will include linear programming problems, the simplex method, quality, revised simplex method, and the transportation problem.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0280 or 1180 or 1185
MATH 1101 - AN INTRODUCTION TO OPTIMIZATION

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students to the techniques of optimization. Applications will be emphasized, but some theory will be addressed and proofs will be discussed. As well, students will be taught how to use available software to answer questions. Course topics will include linear programming, integer programming, nonlinear programming, convex and affine sets, convex and concave functions, unconstrained optimization, and combinatorial optimization (i.e. Network flow problems).

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: MATH 0240 and (MATH 0280 or 1180 or 1185)

MATH 1103 - MATHEMATICAL PROBLEMS IN BUSINESS, INDUSTRY, AND GOVERNMENT

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

MATH 1110 - INDUSTRIAL MATHEMATICS

Minimum Credits: 3  
Maximum Credits: 3  
This course is concerned with the approximate numerical solution of problems which arise in an industrial environment. Topics covered include physical interpretation of a mathematical model, use of library software, preparation of software, analysis of results, and reporting on findings.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: MATH 1180 and 1185

MATH 1119 - APPLIED PROBABILITY FOR ACTUARIAL MATHEMATICS

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Satisfactory/No Credit  
Course Requirements: PREQ: MATH 0230

MATH 1121 - ACTUARIAL MATHEMATICS 2

Minimum Credits: 3  
Maximum Credits: 3  
This course will cover the material listed in the syllabus for exam m (3) (mathematics of life contingencies and financial economics) of the society of actuaries. Specifically it will present the relevant topics in life insurance and life annuities, including multiple decrement models as well as the black and Scholes pricing of derivative securities and risk analysis. The material will be presented in the traditional academic format of lectures and help sessions along with optional sessions directed specifically at preparing students for the SOA exam.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: MATH 0470 or 1120
MATH 1122 - ACTUARIAL MATHEMATICS 3

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (MATH 0230 or 0235) and (MATH 0470 or 1120) and STAT 1151

MATH 1123 - ACTUARIAL MATHEMATICS 4

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MATH 1180 - LINEAR ALGEBRA 1

Minimum Credits: 3
Maximum Credits: 3
This course stresses the theoretical and rigorous development of linear algebra. Major topics include the theory of vector spaces, linear transformations, matrices, characteristic polynomials, bases and canonical forms. Other topics may be covered as time permits.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: MATH 0413 or MATH 0450

MATH 1185 - HONORS LINEAR ALGEBRA

Minimum Credits: 3
Maximum Credits: 3
An introduction to computational and theoretical aspects of linear algebra. Syllabus includes Gaussian elimination, matrix algebra, triangular factorization, vector spaces, linear independence, basis, dimension, orthogonality, inner product, gram-Schmidt, singular value decomposition, determinants, eigenvalues, matrix exponentials, unitary matrices, similarity, positive definiteness, minimum principles, finite elements, norm and condition number, computation of Eigen values, iterative solutions of linear systems, linear inequalities, simplex method.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MATH 1230 - THE BIG IDEAS OF MATHEMATICS

Minimum Credits: 3
Maximum Credits: 3
The "big ideas" course is intended to provide a capstone type experience for math majors. It will integrate the student's current math knowledge into a coherent whole via the adoption of a historical perspective. It is particularly aimed at math majors with an interest in math education or the history, philosophy and psychology of mathematics. Students opting for the optional internship, MATH 1231, will explore how the historical development of math relates to the math in the secondary school. The capstone experience will culminate with a research project and presentation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0430
MATH 1231 - MATH EDUCATION INTERNSHIP 1

Minimum Credits: 1
Maximum Credits: 1
This internship has two components 1) a classroom experience mentoring a high school student who is developing a research project and 2) a seminar discussing the "big ideas" of mathematics in MATH 1230 and how math is developed in the elementary and secondary school curriculum. Interns will spend one hour every two weeks mentoring a high school student at an area high school.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: MATH 1230

MATH 1250 - ABSTRACT ALGEBRA

Minimum Credits: 3
Maximum Credits: 3
In this course the basic algebraic systems, groups and rings are studied in some detail. Topics include: subgroups, permutation groups, homomorphism's, subrings, ideals and quotient rings. The emphasis is on theory with examples.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0430

MATH 1270 - ORDINARY DIFFERENTIAL EQUATIONS 1

Minimum Credits: 3
Maximum Credits: 3
This course covers methods of solving ordinary differential equations which are frequently encountered in applications. General methods will be taught for single n-th order equations, and systems of first order nonlinear equations. This will include phase plane methods and stability analysis. Computer experimentation will be used to illustrate the behavior of solutions of various equations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0280 or 1180 or 1185

MATH 1275 - HONORS ORDINARY DIFFERENTIAL EQUATIONS 1

Minimum Credits: 3
Maximum Credits: 3
This course provides a more thorough mathematical treatment of the theory than is possible in the non-honors course (MATH 1270), and also covers some more recent applications. In addition to basic material on exact solutions, mathematical proofs will be given of the existence and uniqueness theorems, leading to a better understanding of such important topics as phase plane behavior and stability theory. In addition, more topics will be covered, including a more extensive discussion of series solutions and special functions than is possible in MATH 1270. Finally, a course project, usually done in pairs, on a topic to be chosen by the students with guidance and approval from the instructor, will be a key feature.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (MATH 0230 or 0235) and (MATH 1180 or 1185); CREQ: MATH (0413 or 0450)

MATH 1280 - ORDINARY DIFFERENTIAL EQUATIONS 2

Minimum Credits: 3
Maximum Credits: 3
This is a course in stability and qualitative methods for analyzing ordinary differential equations which arise in realistic models. Phase plane
techniques, perturbation methods, and bifurcation theory are studied.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 1270 OR 1275

MATH 1290 - TOPICS IN GEOMETRY

Minimum Credits: 3
Maximum Credits: 3
A course intended to give a "modern" view of geometry. Possible approaches include (1) the connection of geometries to abstract algebraic systems and (2) the deductive, synthetic development of Euclidean and non-Euclidean geometry.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0240 and (MATH 0413 or MATH 0450)

MATH 1310 - GRAPH THEORY

Minimum Credits: 3
Maximum Credits: 3
The concept of a graph and the study of its theoretical properties and applications form the core of this course. Topics include paths, circuits, trees, planar graphs, coloring problems, digraphs, matching theory, and network flows.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0413 or 0450

MATH 1350 - INTRODUCTION TO DIFFERENTIAL GEOMETRY

Minimum Credits: 3
Maximum Credits: 3
Possible topics are the basic ideas of topology, description of curves in space, definition and local study of smooth surfaces in Euclidean space (fundamental forms, geodesics, and curvature), global properties of surfaces, gauss-bonnet formula and applications.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0240 and (MATH 1180 or 1185)

MATH 1360 - MODELING IN APPLIED MATH 1

Minimum Credits: 3
Maximum Credits: 3
This course introduces some of the fundamental approaches of applied mathematics. The emphasis is on the model-building process and on developing an understanding of some of the unifying themes of applied mathematics such as equilibria, stability, conservation laws, etc. The material is presented in the form of case studies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0290 or 1270 or 1275

MATH 1370 - INTRODUCTION TO COMPUTATIONAL NEUROSCIENCE
Minimum Credits: 3
Maximum Credits: 3
This course presents contemporary mathematical theories of neuroscience, including single neurons and neuronal networks. Attention will be given to the dynamics and the function of neural activity.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0240 or MATH 0450 or MATH 0245

MATH 1380 - MATH BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course will provide a broad introduction to mathematical methods typically applied to problems in biology. Models using calculus, ordinary differential equations, partial differential equations, discrete dynamical systems, stochastic dynamics, or a cellular automata framework will be presented and principal methods for their analysis will be described. Computational methods will also be covered, including computing platforms such as XPPAUT. Throughout the course, students will have extensive opportunities to practice the development and analysis of mathematical biology models.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (MATH 0240 or 1180 or 1185) and (MATH 0290 or 1270 or 1275)

MATH 1410 - INTRODUCTION FOUNDATIONS OF MATHEMATICS

Minimum Credits: 3
Maximum Credits: 3
This course introduces the logical foundations of mathematics; it covers the propositional and predicate calculi, formal number theory, set theory, and beginning model theory.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0413 or MATH 0450

MATH 1470 - PARTIAL DIFFERENTIAL EQUATIONS 1

Minimum Credits: 3
Maximum Credits: 3
This is the first term of a two-term sequence in elementary PDE's. The objectives of the course are to provide students with the techniques necessary for the formulation and solution of problems involving PDE's and to prepare for further study in PDE's. The three main types of second order linear PDE's - parabolic, elliptic, and hyperbolic are studied. In addition the tools necessary for the solution of PDE's such as Fourier series and Laplace transforms are introduced.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0240 and ([(MATH 0280 or 1180 or 1185) and (0290 or 1270)] or 0250)

MATH 1510 - MATHEMATICAL THEORY OF PROBABILITY

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the mathematical theory of probability. Major topics include random variables, expectation, characteristic functions, conditional probability, and an introduction to Martingales and Markov chains.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (MATH 0420 or 0450) and (MATH 0280 or 1180 or 1185) or Permission From Instructor

MATH 1530 - ADVANCED CALCULUS 1

Minimum Credits: 3
Maximum Credits: 3
This course contains a rigorous development of the calculus of functions of a single variable, including compactness on the real line, continuity, differentiability, integration, and the uniform convergence of sequences and series of functions. Other topics may be included, such as the notion of limits and continuity in metric spaces.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0420 or 0450

MATH 1540 - ADVANCED CALCULUS 2

Minimum Credits: 3
Maximum Credits: 3
This course, a continuation of MATH 1530, covers the theory of limits, differentiation, and integration of functions of several variables.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 1530

MATH 1550 - VECTOR ANALYSIS AND APPLICATIONS

Minimum Credits: 3
Maximum Credits: 3
Topics covered include: vector algebra, vector differentiation and integration, divergence, gradient, curl, the theorems of green, gauss and stokes, and curvilinear coordinate systems. There will be an emphasis upon problem solving and applications in electromagnetic theory and fluid flow.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0240 and (0250 or 0280 or 1180 or 1185)

MATH 1560 - COMPLEX VARIABLES & APPLICATIONS

Minimum Credits: 3
Maximum Credits: 3
This course covers the following topics: elementary operations with complex numbers, derivatives, integrals, Cauchy's theorem and consequences such as the integral formula, power series, residue theorem, applications to real integrals and series.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0240 or MATH 0245 (MIN GRADE 'B') for both] or MATH 1550

MATH 1570 - INTRODUCTION TO FOURIER ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
The course is a rigorous introduction to Fourier series and integrals with applications to heat flow, wave motion, physics, and number theory. It is intended for students with a basic knowledge of real analysis including uniform convergence of sequences and series of functions. No knowledge of
the Lebasque integral is assumed.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (MATH 0420 or 0450) AND (MATH 0280 or 1180 or 1185)

**MATH 1700 - INTRODUCTION TO TOPOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The topology of $\mathbb{R^1}$, as well as that of general metric spaces, will be studied. Basic notions will be applied to obtain the fundamental existence theorem for first order ordinary differential equations. The course will be run on a theorem proving and problem solving basis.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (MATH 0420 or 0450)

**MATH 1800 - ADVANCED TOPICS IN MATHEMATICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course covers the mathematics content of the second exam of the society of actuaries. Topics include interest theory, annuities, amortization, sinking funds, bonds, stocks, Markowitz portfolio theory, capital asset pricing model, efficient markets, option pricing.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0420 or 0450

**MATH 1900 - INTERNSHIP**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
Under faculty supervision the student participates in a mathematics related experience, project, or job.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** LG/SNC Elective Basis

**MATH 1902 - DIRECTED STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
Under the direction of a faculty member, a student studies a mutually agreed upon topic in mathematics.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

**ME 0024 - INTRODUCTION TO MECHANICAL ENGINEERING DESIGN**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Provides knowledge of design graphics and manufacturing processes by conventional and computer-aided methods.

**Academic Career:** Undergraduate  
**Course Component:** Lecture
MEMS 0024 - INTRODUCTION TO MECHANICAL ENGINEERING DESIGN

Minimum Credits: 3
Maximum Credits: 3
Fundamentals of the design process, basic techniques of graphic communication, and an introduction to the most common mechanical components and manufacturing processes.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0011 or 0015 or 0711 or ET 0011; PROG: School of Engineering

MEMS 0031 - ELECTRICAL CIRCUITS

Minimum Credits: 3
Maximum Credits: 3
Fundamental laws, principles, and analysis techniques for DC and AC linear circuits whose elements consist of passive and active components used in modern engineering practice, including the determination of steady-state and transient responses.

Academic Career: Undergraduate
MEMS 0040 - MATERIALS AND MANUFACTURING

Minimum Credits: 3
Maximum Credits: 3
Manufacturing and processing of ceramics, metals, polymers and composites covering refining and synthesis, shaping methods, control of properties and process selection.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (PHYS 0175 or 0476 or 0152 or 0202); CREQ: (MATH 0290 or 1271 or 1035 or 0202); PROG: School of Engineering

MEMS 0051 - INTRODUCTION TO THERMODYNAMICS

Minimum Credits: 3
Maximum Credits: 3
Basic concepts and interlinking relationships of thermodynamics, fluid mechanics and heat transfer; fluid statics; system and control volumes; thermodynamic properties; work and heat; first law of thermodynamics for control mass and control volume; integral forms of conservation of mass and momentum.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (PHYS 0150 or 0174 or 0201 or 0475) and (CHEM 0101 or 0110 or 0111 or 0410 or 0710 or 0760 or 0960); PROG: School of Engineering

MEMS 0071 - INTRODUCTION TO FLUID MECHANICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (PHYS 0152 or 0175 or 0202 or 0476) and (CHEM 0102 or 0112 or 0120 or 0720 or 0770 or 0970); CREQ: MATH 0290; PLAN: Mechanical Engineering (BSE) PROG: Swanson School of Engineering

MEMS 1010 - EXPERIMENTAL METHODS IN MATERIALS SCIENCE AND ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
Principles and techniques of optical metallography: imaging and quantitative analysis. Mechanical testing techniques, electron microscopy and chemical analysis.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0022 or MET 1162; PROG: School of Engineering

MEMS 1011 - STRUCTURE AND PROPERTIES LAB
Minimum Credits: 3
Maximum Credits: 3
Experimental demonstrations of important structure-property relationships for metals, ceramics and polymers.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PREQ: MEMS 1010; PROG: School of Engineering

MEMS 1014 - DYNAMIC SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
Modeling and analysis of physical systems. Time- and frequency-domain analyses; transient and steady state system response to various excitations; transfer function and state space model representations; Laplace and Fourier transforms.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: [(ENGR 0012 or 0016) or (ET 0023 and 0030)] and (MEMS 0031 or ME 0031 or ECE 0031 or EET 0110) and (MATH 0280 or 0206 or 1180 or 1181 or 1035) and (MEMS 1015); PROG: School of Engineering

MEMS 1015 - RIGID-BODY DYNAMICS

Minimum Credits: 3
Maximum Credits: 3
Dynamics of particles, systems of particles, and rigid bodies including energy and momentum methods, problems of varying forces and constraints, and relationship of motion to different reference frames.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (MATH 0240 or 0241 or 0201) and (ENGR 0135 or 0131 or ET 0051); PROG: School of Engineering

MEMS 1020 - MECHANICAL VIBRATIONS

Minimum Credits: 3
Maximum Credits: 3
Review of free and forced vibrations of single-degree-of-freedom systems with and without damping, multi-degree of freedom systems, vibration isolation, nonlinear vibrations, LaGrange's equations, and vibration of continuous systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ME 1014 or MEMS 1014 or BIOENG 1255; PROG: School of Engineering

MEMS 1028 - MECHANICAL DESIGN I

Minimum Credits: 3
Maximum Credits: 3
Stress and deflection analysis; survey of mechanical design criteria; selection and applications of working stresses for ductile and brittle materials; static, fatigue, and impact loading and combination of stresses.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0141 or 0145 or ET 0053 or BIOENG 1630; PROG: Undergraduate School of Engineering

MEMS 1029 - MECHANICAL DESIGN II
MEMS 1030 - MATERIAL SELECTION

Minimum Credits: 3
Maximum Credits: 3
Analysis and design of machine elements, components, and mechanical systems. Machine elements include shafts, keys, bearings, gears, belts, chains, springs, screws, and motors.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ME 0024 or MEMS 0024 or ET 0035) and (ME 1028 or MEMS 1028); PROG: School of Engineering

MEMS 1032 - AUTOMOTIVE DESIGN AND FABRICATION

Minimum Credits: 3
Maximum Credits: 3
Methodology for materials selection in mechanical design processes. Includes: (i) design process and consideration, (ii) criteria for materials and their shape selection, and (iii) design case study. Mechanical components have mass; they carry loads; they conduct heat and electricity; they are exposed to wear and to corrosive environments; they are made of one or more materials; they have shape; and they must be manufactured. This course provides knowledge on how these activities are related.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ENGR 0022 or MET 1162) and (ME 1028 or MEMS 1028); PROG: School of Engineering

MEMS 1033 - FRACTURE MECHANICS FOR PRODUCT DESIGN AND MANUFACTURING

Minimum Credits: 3
Maximum Credits: 3
An introduction to the principles of fracture mechanics; the essential concepts underlying appropriate materials selection including the effects of shape selection for maximum performance; and the strengths and weaknesses inherent in the choice of, say, metals versus ceramics versus polymers, etc.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ENGR 0022 or MET 1162) and (ME 1028 or MEMS 1028); PROG: School of Engineering

MEMS 1038 - FUNDAMENTALS OF ENGINNEERING PROJECTS

Minimum Credits: 1
Maximum Credits: 1
This course will focus on the development of professional skills required for successful engineering projects. The central objective will be to prepare foundation skills relevant to the senior design course. Course topics will include: project management tools, professional standards and codes, prototype development, design for manufacturing, GD&T, oral presentation skills and presentation of engineering data.

Academic Career: Undergraduate
**MEMS 1041 - MECHANICAL MEASUREMENTS 1**

Minimum Credits: 3  
Maximum Credits: 3  
Fundamentals of mechanical measurements including steady-state and dynamic signals, detector-transducer elements, signal conditioning and readout systems, standards, instrument calibration, statistical treatment of data, error analysis, and technical report writing.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (ENGR 0141 or 0145 or ET 0053 or BIOENG 1630) and (ME 0031 or MEMS 0031 or ECE 0031 or EET 0110 or BIOENG 1310); CREQ: ME 1014 or MEMS 1014 or BIOENG 1255; PROG: School of Engineering

**MEMS 1042 - MECHANICAL MEASUREMENTS 2**

Minimum Credits: 3  
Maximum Credits: 3  
Builds on the foundation of mechanical measurements provided in MEMS 1041 to provide students with the ability to properly design and perform an experiment on a complex mechanical system in order to determine specific characteristics or performance of that system. Specific material includes extended knowledge of statistics and error analysis, computer-based data acquisition, and technical communications.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (ME 1041 or MEMS 1041); PROG: School of Engineering

**MEMS 1043 - SENIOR DESIGN PROJECT**

Minimum Credits: 3  
Maximum Credits: 3  
A major project involving literature search, planning, design, fabrication, experimentation, analysis, technical report, poster presentation, and presentation at a technical symposium is performed by a small team of students under the direction of a faculty advisor and corporate advisor on a project presented by the corporate advisor.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: LVL: Sr; PROG: School of Engineering

**MEMS 1045 - AUTOMATIC CONTROLS**

Minimum Credits: 3  
Maximum Credits: 3  
Modeling of mechanical systems and classical feedback control theory for single-input-single-output systems.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: (ME 1014 or MEMS 1014 or BIOENG 1255); PROG: School of Engineering

**MEMS 1047 - FINITE ELEMENT ANALYSIS**

Minimum Credits: 3  
Maximum Credits: 3  
The finite element method applied in solid mechanics, fluid mechanics, and heat transfer.
MEMS 1048 - ANALYSIS AND CHARACTERIZATION AT THE NANO-SCALE

Minimum Credits: 3
Maximum Credits: 3
This course offers a survey of micro-analytical, microscopy and diffraction methods that are widely used for the analysis of composition, chemistry, structure, scale and morphology of advanced materials. It introduces the most basic concepts required to understand experimental data obtained with these modern techniques. The main objectives of the course are to enable students to interpret and evaluate relevant data sets presented in the research literature and to identify experimental tools to solve a given Nano-research characterization problem. Some prerequisite basic knowledge of the structure of solid matter (e.g. crystals and amorphous materials), diffraction methods (e.g. X-ray diffraction) and processing-property-structure relationships in materials is expected.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MEMS 1028; PROG: School of Engineering

MEMS 1049 - MECHATRONICS

Minimum Credits: 3
Maximum Credits: 3
An introduction to mechatronics, or the interfacing of mechanical and electrical systems. Focus is on embedded controllers (Motorola 68hc11 and pic 16f84) and their programming, power and interfacing electronics, actuators, sensors, and integration of these components to create a complete functional mechatronic system.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (ME 1014 or MEMS 1014); PROG: Swanson School of Engineering

MEMS 1051 - APPLIED THERMODYNAMICS

Minimum Credits: 3
Maximum Credits: 3
Thermodynamic processes involving energy and entropy changes in real and ideal gases, vapors, and liquids, and mixtures of those fluids. Basic thermodynamic cycles (vapor and gas power, refrigeration, and heat pumps). Discussion of thermodynamic relations for simple compressible substances and introduction to psychometrics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ME 0051 or MEMS 0051 or MET 1110 or BIOENG 1210; PROG: School of Engineering

MEMS 1052 - HEAT AND MASS TRANSFER

Minimum Credits: 3
Maximum Credits: 3
One- and two-dimensional steady and unsteady heat conduction; internal and external forced convection; free convection; engineering principle of radiation; heat exchangers and special topics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ME 0051 or MEMS 0051 or BIOENG 1210 or MET 1110; PROG: School of Engineering
MEMS 1053 - STRUCTURE OF CRYSTALS AND DIFFRACTION

Minimum Credits: 3  
Maximum Credits: 3  
Crystallography of materials; Bravais lattices, crystal systems, and crystal structures. Diffraction methods; x-ray, electron, and neutron scattering; atomic scattering factor; structure factor; powder techniques; Laue method; reciprocal lattice; electron diffraction; amorphous materials; thermodynamics of crystals and crystal defects; polymorphism; order-disorder phenomena.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PREQ: (ENGR 0022 or MET 1162); LVL: Jr or Sr; PROG: Swanson School of Engineering

MEMS 1057 - MICRO/NANO MANUFACTURING

Minimum Credits: 3  
Maximum Credits: 3  
Explores different micro/nano manufacturing options, material choices, and a variety of applications. The goal is to gain an understanding of various micro/nano fabrication techniques, learn major applications and principles of micro/nano systems, and develop an ability to design and fabricate new micro/nano systems.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PROG: Swanson School of Engineering

MEMS 1058 - ELECTROMAGNETIC PROPERTIES OF MATERIALS

Minimum Credits: 3  
Maximum Credits: 3  
Review of basic principles: quantum theory, band and zone theory. Transport, electrical, and thermal properties; semiconductors and semiconductor devices; magnetic materials, hard and soft; dielectric and optical properties.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: ENGR 0022 or MET 1162; PROG: School of Engineering

MEMS 1059 - PHASE EQUILIBRIA IN MULTI-COMPONENT MATERIALS

Minimum Credits: 3  
Maximum Credits: 3  
Thermodynamics of solutions with applications to materials systems; heterogeneous phase equilibria; relations between free energy and phase diagrams, electrochemistry; rate processes; thermodynamics of surfaces.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PREQ: (ENGR 0022 or MET 1162) and (ME 0051 or MEMS 0051 or MET 1110 or BIOENG 1210); LVL: Jr or Sr; PROG: Swanson School of Engineering

MEMS 1060 - NUMERICAL METHODS IN ENGINEERING ANALYSIS

Minimum Credits: 3  
Maximum Credits: 3  
Introduction to numerical techniques for the solution of linear and nonlinear equations, numerical integration and differentiation, interpolation, ordinary and partial differential equations, and eigenvalue problems.  
Academic Career: Undergraduate
MEMS 1063 - PHASE TRANSFORMATION AND MICROSTRUCTURE EVOLUTION

Minimum Credits: 3
Maximum Credits: 3
Phase equilibria; binary and ternary system; phase rule; thermodynamics and phase diagrams; diffusion in materials; phase transformations; nucleation and growth kinetics; precipitation reactions; solidification; glass-forming systems; phase separation; displacive or martensitic transformations; microstructural development in metallic and non-metallic systems; electron theory of solids; zone theory; electrical and magnetic properties of materials.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

Course Requirements: PREQ: MEMS 1053 and MEMS 1059; LVL: Jr or Sr; PROG: Swanson School of Engineering (UENGR)

MEMS 1065 - THERMAL SYSTEMS DESIGN

Minimum Credits: 3
Maximum Credits: 3
Design, analysis, and optimization of thermal systems. Systems analysis applied to heat exchanger, power conversion, air conditioning, refrigeration, and heat recovery systems. Economics, equation fitting, and thermal property evaluation is integrated into the simulation and optimization of thermal system designs.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

Course Requirements: PREQ: MEMS 1051 and 1052 and 0071; PROG: School of Engineering

MEMS 1070 - MECHANICAL BEHAVIOR OF MATERIALS

Minimum Credits: 3
Maximum Credits: 3
Theory of elasticity, stress, strain, constitutive equations, isotropic and anisotropic elasticity, wave propagation in brittle solids, time dependent deformation, viscoelasticity, vibrations, damping, anelasticity, creep, design of creep resistant microstructures, deformation of polymers, physics of fracture, fracture mechanisms, brittle fracture, ductile fracture, design of fracture-resistant microstructures.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

Course Requirements: (ENGR 0022 or MET 1162) and (ENGR 0141 or ENGR 0145 or ET 0053); PROG:

MEMS 1071 - APPLIED FLUID MECHANICS

Minimum Credits: 3
Maximum Credits: 3
Basic principles of computational fluid dynamics (CFD). Hands-on experience using a commercial CFD package. Students will use this tool to solve a design problem. External flows with particular emphasis on aerodynamics. Fluid machinery. Experimental fluid mechanics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

Course Requirements: PREQ: MEMS 0071 or 1072; PROG: Swanson School of Engineering

MEMS 1072 - APPLIED FLUID DYNAMICS
Minimum Credits: 3
Maximum Credits: 3
Kinematics of fluids; navier-stokes equations; flow of incompressible, inviscid fluids; dimensional analysis and similarity; internal flows in pipes; boundary layer theory; and external flow past bodies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ME 0051 or MEMS 0051 or BIOENG 1210 or MET 1110; PROG: School of Engineering

MEMS 1079 - SENIOR MATERIALS RESEARCH PROJECT

Minimum Credits: 3
Maximum Credits: 3
A major project involving literature search, planning, experimentation, analysis, an oral presentation, and a final technical report. The project is either sponsored by the department or a local company and is conducted by an individual or a small team of students with a faculty adviser.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

MEMS 1082 - ELECTROMECHANICAL SENSORS AND ACTUATORS

Minimum Credits: 3
Maximum Credits: 3
The objective of this course is to provide a thorough understanding of the various mechanisms that can be exploited in the design of electromechanically sensors and actuators. These transduction mechanisms include: 1) transduction based on changes in the energy stored in the electric field, 2) in the energy stored in the magnetic field, 3) piezoelectricity and pyroelectricity, 4) linear inductive transduction mechanisms, and 5) resistive transduction mechanisms. Will discuss various transduction materials, sensors and actuators from a wide range of applications.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

MEMS 1085 - DEPARTMENTAL SEMINAR

Minimum Credits: 0
Maximum Credits: 0
Seminars are designed to acquaint the student with aspects of engineering not normally encountered in classes and include a wide range of topics such as the significance of engineering as a profession and the relation of engineering to current social problems.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: H/S/U Basis
Course Requirements: PROG: Swanson School of Engineering

MEMS 1097 - SPECIAL PROJECTS

Minimum Credits: 1
Maximum Credits: 3
Investigation and research embodying testing, original design, or research on an approved subject; or an individual course of study guided by an approved departmental faculty member.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

MEMS 1098 - SPECIAL PROJECTS II
Minimum Credits: 1
Maximum Credits: 3
Investigation and research embodying testing, original design, or research on an approved subject; or an individual course of study guided by an approved departmental faculty member.

**Academic Career:** Undergraduate
**Course Component:** Directed Studies
**Grade Component:** Letter Grade

**MEMS 1101 - FERROUS PHYSICAL METALLURGY**

Minimum Credits: 3
Maximum Credits: 3
**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: (ENGR 0022 or MET 1162) and (ME 0051 or MEMS 0051 or BIOENG 1210 or MET 1110) and MEMS 1010; PROG: Undergraduate Engineering

**MEMS 1102 - PRINCIPLES AND APPLICATIONS OF STEEL ALLOY DESIGN**

Minimum Credits: 3
Maximum Credits: 3
This course will present the students with a discussion of the properties that are required of engineering alloys for a given commercial application. The alloy design, thermomechanical processing and required package of mechanical properties for plate, strip, bar, rod, wire and tubular products will be reviewed. These include: strength, toughness, formability, weldability, fatigue resistance and corrosion/oxidation resistance.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: MEMS 1101; PROG: Swanson School of Engineering

**MEMS 1103 - PRINCIPLES AND APPLICATIONS OF STEEL PROCESSING AND DESIGN**

Minimum Credits: 3
Maximum Credits: 3
This course will present case studies of actual components used in commercial applications in the automotive, construction, oil and gas, and nuclear industries. This course will guide the student from the alloy selection, microstructural processing, and mechanical properties to the final fabrication steps.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: MEMS 1102; PROG: Swanson School of Engineering

**MEMS 1111 - MATERIALS FOR ENERGY GENERATION AND STORAGE**

Minimum Credits: 3
Maximum Credits: 3
The objective of this course is to provide an overview of the important renewable energy resources and the modern technologies to harness and store them. After taking MEMS 1111, students are expected to develop a solid scientific and technological understanding of new alternative energy technologies. This course will give an overview on harnessing renewable energy resources and storing collected energy. In each topic, issues relevant to basic principles and technological barriers limiting the use of non-fossil energy will be discussed.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PROG: Swanson School of Engineering
MEMS 1120 - APPLIED ENGINEERING SIMULATION IN DESIGN

Minimum Credits: 3
Maximum Credits: 3
This course will focus on the development of critical thinking skills tailored to engineering simulation in mechanical design. Commonly used computational simulation tools including finite element analysis and computational fluid dynamics will be highlighted. Students will examine the role of simulation in product design and learn to recognize opportunities to integrate simulation-based analysis into traditional engineering analysis and design workflows. A term-long project will offer exposure to simulation tools and provide students the context to practice their skills in a complex design environment. Students are required to take the one-credit course MEMS 1121 Simulation Workshop concurrently.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MEMS 0051 and 0071 and 1028

MEMS 1121 - APPLIED ENGINEERING SIMULATION IN DESIGN

Minimum Credits: 1
Maximum Credits: 1
Provide an environment for hands-on learning of simulation software and an opportunity to interact with the simulation student community. Provide a mechanism for the discussion of special topics and for guest speakers. Develop practical simulation software skills.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0145 and MEMS 0051; CREQ: MEMS 1120

MEMS 1163 - CERAMIC MATERIALS

Minimum Credits: 3
Maximum Credits: 3
Structure of ceramics and glasses. Microstructures and their development. Properties, processing, and applications.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0022; PROG: Undergraduate School of Engineering

MEMS 1174 - CERAMIC PROCESSING

Minimum Credits: 3
Maximum Credits: 3
The course is focused on powder processing of ceramic materials. It is arranged according to the steps in processing, starting with powder synthesis and characterization, proceeding through the commonly used powder forming methods and finally to the high temperature sintering of the product.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: ENGR 0022, MSE 1163 or MEMS 1163; PROG: School of Engineering

MEMS 1477 - THIN FILM PROCESSES

Minimum Credits: 3
Maximum Credits: 3
This course will be an overview of the major thin film processing methods and the primary techniques to characterize thin film surfaces and interfaces. Topics to be included: vacuum science and technology, thin-film deposition techniques, such as pvd, mbe, cvd and the fundamental surface processes of epitaxial growth. The analytical techniques will be presented, e.g. electron microscopy, AES, XPS, AFM and STM.

Academic Career: Undergraduate
MRST 1002 - INTRODUCTION TO THE RENAISSANCE

Minimum Credits: 3
Maximum Credits: 3
The idea of the Renaissance is central to Western culture. Many of our values and tastes devolve from--or consciously react against--patterns that were established or reinterpreted five hundred years ago. The student who explores the renaissance, therefore, gains hold of one of the keys of Western civilization. He or she also acquires practice in critical reading, discussion, and the written expression of ideas.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

BUSMIS 1614 - SPECIAL TOPICS IN BUSINESS INFORMATION SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
A variety of management information systems topics are addressed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Accounting(BSB),Finance(BSB),General Management(BSB),Global Management(BSBA),Marketing(BSB), Business Information Systems(BSB), Human Resources Management,Human Resources Management(BSB),Supply Chain Management(BSB) and undeclared CBA Majors

ORBIOL 0031 - MICROBIOLOGY 1

Minimum Credits: 4
Maximum Credits: 4
This is an introductory course in microbiology designed for nursing students with no previous microbiology background. Three major areas included are the microorganisms, the immune mechanisms of the host, and the interaction of the host and the microorganisms in the disease process and in homeostasis. This course includes a laboratory series which is coordinated with the lecture content. Major emphasis is placed on infectious diseases and infection control at the nursing level.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Nursing students only.

ORBIOL 0032 - MICROBIOLOGY 1 LABORATORY

Minimum Credits: 0
Maximum Credits: 0
Content is devoted to the development of student's basic laboratory skills, application of microbiological methods and will emphasize performance, scientific investigation, and safety.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: No Grade Required
Course Requirements: School of Nursing students only.

ORBIOL 0033 - MICROBIOLOGY 1 LABORATORY
ORBIOL 1020 - PRINCIPLES OF MICROBIOLOGY

Minimum Credits: 4
Maximum Credits: 4
An introductory course in microbiology for dental hygiene students with no previous background in microbiology. Major areas included are microorganisms, immune mechanisms of the host and the interaction of the host and the microorganisms in disease and homeostasis. Major emphasis is placed on diseases with oral manifestations and infection control in dental medicine. The laboratory component is devoted to microbiological methods, infection control and oral ecology.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

ORBIOL 1025 - INTRODUCTION TO MICROBIOLOGY

Minimum Credits: 3
Maximum Credits: 3
An overview of medical microbiology introduces the student to medically important bacteria, fungi, viruses, parasites and to immunity.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

ORBIOL 1900 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis

GREEKM 0101 - GREEK (MODERN) 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

GREEKM 0102 - GREEK (MODERN) 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0231 or GREEKM 0101; MIN GRADE: 'C'

GREEKM 0103 - GREEK (MODERN) 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting are cognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0232 or GREEKM 0102; MIN GRADE: 'C'

GREEKM 0104 - GREEK (MODERN) 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0233 or GREEKM 0103; MIN GRADE: 'C'

GREEKM 0105 - GREEK (MODERN) 5

Minimum Credits: 3
Maximum Credits: 3
Third-year Modern Greek builds on skills acquired in first and second year Greek. It is a thematic exploration of Greek culture at the advanced intermediate level. Through a combination of movies, songs, poems and newspapers, it exposes students to aspects of traditional and pop Greek culture as well as to important current issues. By the end of this course students should be able to: talk about ecology and the environment; discuss "rembetica" songs within their social context; look for a job, write a CV, prepare for an interview; and, understand the history of the Greek language.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0234 or GREEKM 0104; MIN GRADE 'C' FOR ALL LISTED COURSES

GREEKM 0106 - GREEK (MODERN) 6

Minimum Credits: 3
Maximum Credits: 3
This course continues the thematic exploration of Greek culture at the advanced intermediate level. By the end of this year, students will be able to participate in most conversations employing common idiomatic language and express opinion and arguments with clarity and fluency. By the end of this course students should be able to: talk about the history of the Akropolis and the Olympic Games; discuss the achievements of the Byzantine Empire; employ useful banking and economic terminology; understand the Greek polity and the language of the Press; and engage with Modern Greek literature.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: GREEKM 0105; MIN GRADE 'C'
GREEKM 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

GREEKM 1905 - UNDERGRADUATE TEACHING ASSISTANT IN MODERN GREEK

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

GREEKM 1909 - SPECIAL TOPICS IN MODERN GREEK

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 0100 - FUNDAMENTALS OF WESTERN MUSIC

Minimum Credits: 3
Maximum Credits: 3
A prerequisite for the music major curriculum, this course trains the student to recognize intervals, modes, and harmonic motion, and provides the critical keyboard skills needed to comprehend the roles of melody and harmony in European-American music. The course will emphasize keyboard-based training as a preparation for further study in music.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 0115 - THE ALEXANDER TECHNIQUE

Minimum Credits: 1
Maximum Credits: 1
An elective, this course teaches musicians, actors, and other kinetic performers how posture and body awareness impact their health. Students will learn how to take conscious control of their movements during activities so their performances will be fluid, natural, poised and expressive to their fullest potential. The course will improve the quality of performance, daily routines, and study habit positions, and prevent repetitive movement through conscious release of the muscles in the upper body.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 0121 - BASIC MUSICIANSHP: CLASS PIANO

Minimum Credits: 3
Maximum Credits: 3
This course in basic musicianship provides non-music majors with keyboard skills while introducing them to basics of music theory. Course content includes scales, intervals, chords, and simple analysis. The course prepares students to transpose and sight read. Students will also be expected to take
Electronic pianos are used in class and are available for daily practice.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**MUSIC 0122 - BASIC MUSICIANSHIP: CLASS GUITAR**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course is designed to provide non-music majors with an introduction to the techniques of classical, folk, rock, and jazz guitar. While the emphasis is on playing skills, the course also introduces many aspects of music theory and notation.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**MUSIC 0123 - BASIC MUSICIANSHIP: CLASS VOICE**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course is designed for non-voice majors who want to develop their singing and sight-reading skills. It provides an introduction to posture, breathing, tone production, diction, and interpretation, while introducing students to the elements of music theory and notation.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**MUSIC 0211 - INTRODUCTION TO WESTERN ART MUSIC**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This class will examine the history, culture, and practice of "classical" music. We will explore the technical workings of music and learn what to listen for in a wide variety of musical styles. We will also discuss the values and meanings of music in different social and political contexts. No prior knowledge of music is necessary and there is no requirement to read music to succeed in the course.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**MUSIC 0222 - HISTORY OF WESTERN MUSIC TO 1750**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- A study of selected master works or Western art music in a historical context from Gregorian chant through Johann Sebastian Bach. Emphasis is on musical understanding through critical listening, score study, and lectures.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**MUSIC 0224 - HISTORY OF WEST MUSIC SINCE 1750**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- This course traces the history of musical style from the late eighteenth century to the present, through a close study of representative works, in the context of leading artistic and intellectual trends.

**Academic Career:** Undergraduate
MUSIC 0232 - HISTORY OF OPERA

Minimum Credits: 3  
Maximum Credits: 3  
The course introduces students to the history and literature of opera, from its precursors in late Renaissance Italy to the present day. Emphasis is on changing styles, genre, and performance practice, as well as on developing listening skills.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

MUSIC 0234 - HISTORY OF THE SYMPHONY

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students to the development of the symphony from its origins to the present. Students study individual symphonic compositions from both historical and analytical viewpoints. Topics covered include changes in instrumentation, harmony, formal design, as well as the changing place of the genre in concert life.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

MUSIC 0311 - INTRODUCTION TO WORLD MUSIC

Minimum Credits: 3  
Maximum Credits: 3  
This introductory course deals with a great variety of traditional musical genres from selected cultures around the world. It aims to familiarize students with music sound and music structure of different people, to help them appreciate music in its cultural context, and to give them a broad worldview of music both as a human activity with social functions and as an artistic expression. Generous use will be made of audio-visual aids and live performances in the presentation of materials.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

MUSIC 0375 - INTRODUCTION TO OPERA

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

MUSIC 0411 - THEORY 1

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces the principles and practice of diatonic harmony and voice leading, through a study of works by leading composers of the 18th and 19th centuries.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: MUSIC 0100 or Music Theory Score equal/greater 13
MUSIC 0412 - MUSICIANSHIP 1

Minimum Credits: 1
Maximum Credits: 1
This course provides a disciplined environment in which to develop or improve audiation and aural skills, including sight-singing (moveable 'Do' solfeggio) in major and minor keys, interval recognition exercises, recognition of triads in inversions and with added tones, and melodic and rhythmic dictation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0100 (Min Grade B-) or Music Theory Score equal/greater than 13

MUSIC 0415 - THEORY 2

Minimum Credits: 3
Maximum Credits: 3
This course introduces the principles and practice of diatonic harmony and voice leading, through a study of works by leading composers of the 18th and 19th centuries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0411

MUSIC 0416 - MUSICIANSHIP 2

Minimum Credits: 1
Maximum Credits: 1
This course is the sequel to MUSIC 0412 and continues to develop and improve audiation and aural skills, including sight-singing (moveable 'Do' solfeggio) in major and minor keys; recognition of chord progressions, cadences, and non-harmonic tones; melodic, rhythmic, and harmonic dictation in multiple voices.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0412

MUSIC 0417 - THEORY 3

Minimum Credits: 3
Maximum Credits: 3
This course introduces the principles and practice of chromatic harmony and voice leading, through a study of works by leading composers of the 18th and 19th centuries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0415

MUSIC 0419 - THEORY 4

Minimum Credits: 3
Maximum Credits: 3
The emphasis of this course will be the analysis of contemporary music from around the world. A member of the composition/theory faculty will teach the course. In addition, ethnomusicology faculty will lead class sessions on a variety of conceptual approaches to music-making and the organization of sound throughout the world. This approach to music theory aims to benefit from the knowledge and experience of the broader music faculty. The first half of the semester will focus on developing the analytic techniques necessary for a careful investigation of a particular musical
component (melody, rhythm, harmony, form, and so on). In the second half of the semester, students will focus on close analyses of particular pieces of music, with attention to the cultural context and aesthetic values that define individual works.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0417

MUSIC 0510 - VOICE-JAZZ

Minimum Credits: 1
Maximum Credits: 1
This course is designed to teach jazz vocal style and improvisation in an individualized setting. Students will learn the basics of jazz voice production through technical exercises at the keyboard. Jazz terminology will be introduced and students will internalize jazz rhythms and articulations. The course provides for active listening with an emphasis on sight singing and ear training. Students will explore scale pattern and modes as elements of improvisation. They will express such technique through call-and-response and the embellishment of standard jazz tunes.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MUSIC 0510

MUSIC 0511 - VOICE

Minimum Credits: 1
Maximum Credits: 1
This course provides instruction in vocal techniques and literature. Students receive a one hour private lesson each week. May be repeated for credit.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0510

MUSIC 0512 - PIANO

Minimum Credits: 1
Maximum Credits: 1
This course provides instruction in the techniques and literature of the piano. Students receive a one hour private lesson each week. May be repeated for credit.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0510

MUSIC 0513 - ORGAN

Minimum Credits: 1
Maximum Credits: 1
This course provides instruction in the techniques and literature of the organ. Students receive a one hour private lesson each week. May be repeated for credit.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0510

MUSIC 0515 - VIOLIN
Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the violin. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

MUSIC 0516 - VIOLA

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the viola. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

MUSIC 0517 - VIOLONCELLO

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the violoncello. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade  
Course Requirements: PREQ: MUSIC 0517

MUSIC 0518 - DOUBLE BASS / BASS GUITAR

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the double bass. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade  
Course Requirements: PREQ: MUSIC 0518

MUSIC 0519 - FLUTE

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the flute. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade  
Course Requirements: PREQ: MUSIC 0519

MUSIC 0520 - OBOE
Minimum Credits: 1
Maximum Credits: 1
This course provides instruction in the techniques and literature of the oboe. Students receive a one hour private lesson each week. May be repeated for credit.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0520

MUSIC 0521 - CLARINET

Minimum Credits: 1
Maximum Credits: 1
This course provides instruction in the techniques and literature of the clarinet. Students receive a one hour private lesson each week. May be repeated for credit.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0521

MUSIC 0522 - SAXOPHONE

Minimum Credits: 1
Maximum Credits: 1
This course provides instruction in the techniques and literature of the saxophone. Students receive instruction in both jazz and classical techniques. One hour private lesson per week. May be repeated for credit.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0522

MUSIC 0523 - FRENCH HORN

Minimum Credits: 1
Maximum Credits: 1
This course provides instruction in the techniques and literature of the French horn. Students receive a one hour private lesson each week. May be repeated for credit.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0523

MUSIC 0524 - TRUMPET

Minimum Credits: 1
Maximum Credits: 1
This course provides instruction in the techniques and literature of the trumpet. Students receive a one hour private lesson each week. May be repeated for credit.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: MUSIC 0524

MUSIC 0525 - BASSOON
Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the bassoon. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade  
Course Requirements: PREQ: MUSIC 0525

**MUSIC 0526 - TROMBONE**

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the trombone. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: MUSIC 0526

**MUSIC 0527 - PERCUSSION**

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of percussion. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade  
Course Requirements: PREQ: MUSIC 0527

**MUSIC 0528 - JAZZ-Studio Set Drumming**

Minimum Credits: 1  
Maximum Credits: 1  
Course will consist of the following styles of music technique for students to become qualified professionals in the entertainment industry. The music styles for the course will be: jazz, pop, big band, and recording session technique. These styles will also be enhanced with training in ear development, sight reading, and improvisational class demonstrations.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: MUSIC 0528

**MUSIC 0529 - GUITAR**

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the guitar. Students receive a one hour private lesson each week. May be repeated for additional credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

**MUSIC 0530 - JAZZ GUITAR**

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of the bassoon. Students receive a one hour private lesson each week. May be repeated for credit.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade
This course provides instruction in the techniques and literature of the jazz guitar. Students receive a one hour private lesson each week. May be repeated for credit.

**Course Requirements:**
- **PREQ:** MUSIC 0530

### MUSIC 0533 - JAZZ PIANO

Minimum Credits: 1  
Maximum Credits: 1  
This course is designed to teach jazz piano and improvisation in an individualized setting. Students will learn the basics of jazz piano through technical exercises at the keyboard. Students will explore scale pattern and modes as elements of improvisation.

**Course Requirements:**
- **PREQ:** MUSIC 0533
- **MUSIC 0540 - NON-WESTERN INSTRUMENTS**

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of non-Western instruments. Students receive a one hour private lesson each week. May be repeated for credit.

**Course Requirements:**
- **PREQ:** MUSIC 0530

### MUSIC 0540 - NON-WESTERN INSTRUMENTS

Minimum Credits: 1  
Maximum Credits: 1  
This course provides instruction in the techniques and literature of non-Western instruments. Students receive a one hour private lesson each week. May be repeated for credit.

**Course Requirements:**
- **PREQ:** MUSIC 0530

### MUSIC 0609 - GOSPEL CHOIR

Minimum Credits: 1  
Maximum Credits: 1  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: Letter Grade

### MUSIC 0611 - COLLEGIATE CHORALE

Minimum Credits: 1  
Maximum Credits: 1  
Open to students, faculty, staff, and community. The study and performance of traditional and contemporary choral works.

**Course Requirements:**
- **PREQ:** MUSIC 0530

### MUSIC 0612 - HEINZ CHAPEL CHOIR

Minimum Credits: 1  
Maximum Credits: 1  
An acapella choir singing a wide range of choral music. Regular performances on campus and on annual tour.

**Course Requirements:**
- **PREQ:** MUSIC 0530
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: MUSIC 0612

**MUSIC 0613 - UNIVERSITY GLEE CLUB**

Minimum Credits: 1  
Maximum Credits: 1  
An ensemble of men's voices that performs on campus and on tour. Repertoire ranges from traditional glee club numbers, through broadway hits, to works from the classical literature.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: MUSIC 0613

**MUSIC 0614 - WOMEN'S CHORALE**

Minimum Credits: 1  
Maximum Credits: 1  
Performs treble choral music from the 16th century to today. Members receive instruction in vocal technique and sight singing skills. Emphasis is given to diction and stage presence.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: MUSIC 0614

**MUSIC 0615 - CARPATHIAN MUSIC ENSEMBLE**

Minimum Credits: 1  
Maximum Credits: 1  
The ensemble introduces students to Hungarian, Slovak, Romanian, Polish, Ukrainian, Gypsy, and Jewish musical traditions. Through weekly rehearsals, students learn musical styles, improvisation techniques, and performance practices with regard to diverse yet mutually interconnected music genres.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

**MUSIC 0620 - UNIVERSITY ORCHESTRA**

Minimum Credits: 1  
Maximum Credits: 1  
Open to students, faculty, staff, and community musicians. The orchestra performs a wide variety of works from the standard repertoire, along with contemporary compositions.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: MUSIC 0620

**MUSIC 0630 - MARCHING BAND**

Minimum Credits: 1  
Maximum Credits: 1  
The band performs at athletic events and in concert. Membership is by audition.  
Academic Career: Undergraduate  
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MUSIC 0630

MUSIC 0631 - CONCERT BAND

Minimum Credits: 1
Maximum Credits: 1
The concert band prepares and performs music from the band repertoire. Membership is by audition.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MUSIC 0631

MUSIC 0640 - JAZZ ENSEMBLE

Minimum Credits: 1
Maximum Credits: 1
Big band jazz performances and rehearsal techniques. Performances include festivals, concerts, and tours.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MUSIC 0640

MUSIC 0650 - COLLEGIUM MUSICUM

Minimum Credits: 1
Maximum Credits: 1
The collegium musicum is an ensemble of instruments and voices that explores a wide variety of repertoires using early instruments and authentic performance practices.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

MUSIC 0660 - AFRICAN DRUMMING ENSEMBLE

Minimum Credits: 1
Maximum Credits: 1
The ensemble focuses on the drumming techniques of selected African society, the ensemble performs in collaboration with the Afro-American dance class and the Oakland dance school, and various local schools.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 0661 - THE PITT AFROPOP ENSEMBLE

Minimum Credits: 1
Maximum Credits: 1
In this course, students will learn how to perform and compose popular music styles that originated from or have a cultural connection to Africa. Through performance, the course exposes the interconnections between African music and the music of the African diaspora such as reggae and jazz.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
MUSIC 0672 - CHAMBER MUSIC

Minimum Credits: 1
Maximum Credits: 1
Students may elect chamber music to study any approved repertoire involving more than one instrument or voice.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 0673 - SMALL JAZZ ENSEMBLES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 0690 - UNIVERSITY GAMELAN

Minimum Credits: 1
Maximum Credits: 1
A gamelan is a set of mostly percussive instruments featuring tuned bronze gongs, bronze-keyed instruments, and drums. In the beginning ensemble, students will learn how to perform simple compositions on several instruments as well as the basic organizing principles of javanese traditional music. The advanced ensemble is made up of students invited to join after at least one semester of beginning gamelan. Students in the advanced group will learn more complex instruments and pieces. The ensemble will also perform publically at least once every year.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 0711 - HISTORY OF JAZZ

Minimum Credits: 3
Maximum Credits: 3
The course focuses on the chronological development of jazz from its beginnings on the plantation to its present state as a world concert music. Various styles such as ragtime, blues, gospel, spirituals, rhythm and blues, rock, soul, etc., Are examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 0844 - THE MUSIC OF THE BEATLES

Minimum Credits: 3
Maximum Credits: 3
This course combines a study of the cultural context in which The Beatles worked with a consideration of how the music was created and evolved over time. Topics include the band's formative influences, relationships to contemporary artists, and evolution from live performing band to studio recording artists. Broader contextual themes include the rise of "teenage culture", Beatlemania as a phenomenon most closely associated with young female fans, and the band's relationship to the "youth counterculture".

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 0854 - HEAVY METAL MUSIC
MUSIC 0896 - MUSIC AND FILM

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

This introductory course, designed for non-majors with no previous background in music or film studies, examines music within the context of film, instructing students how to listen and think critically about the music and its relationship to the moving image and narrative.

MUSIC 1224 - LATER RENAISSANCE AND BAROQUE MUSIC

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

Starting with the new attitudes towards word-tone relationships that can be seen in the music of Josquin, and with the rise of idiomatic instrumental music, the course will trace those trends, among others through the music of such composers as Josquin, Willaert, Rore, Lassus, Monteverdi, Corelli, Vivaldi, Handel, and J.S. Bach.

MUSIC 1226 - CLASSICAL AND EARLY ROMANTIC MUSIC

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

The course will begin a few decades before 1750, tracing the new stylistic trends that grew up in Italy and France during Bach's lifetime, and will continue through Mozart, Haydn, and Beethoven to the composers of the early nineteenth century who still composed within the classical aesthetic, e.g. Schubert, Schumann, and Mendelssohn.

MUSIC 1228 - LATE ROMANTIC AND EARLY 20TH CENTURY MUSIC

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

This course will begin with the more revolutionary nineteenth-century composers who worked in Paris--Chopin, Berlioz, Liszt--and trace the breakdown of tonality and the emergence of new styles and structural principles in the late nineteenth and twentieth centuries.

MUSIC 1230 - MUSIC SINCE 1945

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate

This course introduces students to Western art music created since 1945.
MUSIC 1242 - MAJOR COMPOSER

Minimum Credits: 3
Maximum Credits: 3
This course examines the life and works of a major figure in Western art music. The content of the course changes, but it emphasizes music in its historical and cultural contexts, as well as individual genres and styles.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MUSIC 0411 and 0415

MUSIC 1262 - CRITICAL LISTENING AND MUSIC CRITICISM

Minimum Credits: 3
Maximum Credits: 3
This course applies journalistic music criticism to develop critical listening skills crucial to learning about and performing classical and other music. In writing assignments and in class discussion, students will critique concerts and recordings, then defend their opinions with factual evidence.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1270 - MUSIC, CULTURE & TECHNOLOGY

Minimum Credits: 3
Maximum Credits: 3
Students will engage with major social, historical, and cultural issues affecting music technology in the West from the phonograph in the 19th century to the iPhone in the 21st.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 1280 - MUSIC, ARTS, AND CONFLICT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

MUSIC 1306 - MUSIC AND DISABILITY STUDIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 1307 - MUSIC AND SPORTS
MUSIC 1310 - GLOBAL AND POPULAR MUSIC

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

This course introduces students to theories and research methodologies in global and popular music, including but not limited to musical and textual transcription, fieldwork and methods for relating social behavior to musical behavior.

MUSIC 1312 - GLOBAL MUSIC INDUSTRIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 1320 - AMERICAN MUSIC

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

The course will focus on the major genres crucial to the understanding of music in American life, both written and unwritten as well as popular, vernacular and classical. Special attention will be given to the results of acculturation.

MUSIC 1326 - AFRICAN-AMERICAN MUSIC IN U.S.

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

This course is designed to familiarize the student with various phases of African-American music existing in North America; blues, gospel-spirituals, work songs, children's games songs, and classical compositions of ragtime composers Scott Joplin, J.P. Johnson, etc. Students will conduct field projects centered around "street recordings, locations, interviews of local and visiting artists, etc." A detailed study of great Pittsburgh performers present and past will constitute a major portion of this course.

MUSIC 1327 - GLOBAL HIP HOP

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

This seminar analyzes how diverse groups of musicians and listeners use hip-hop to express local and transnational claims of belonging through the appropriation of musical genres identified with the West and with African Americans in particular. A closer reading of global hip-hop practices offers insights into the genre's artistic goals and its social profile in a variety of contexts. Through analyses of locally distinct musical expressions, marketing trends within national and global music industries, and state-sponsored policies relating to hip-hop, this course sheds light on hip-hop's
role in constituting cultural and political identities among diverse groups of people in the U.S. And abroad.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 1332 - MUSIC IN LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
Mexico, Venezuela, Columbia, Panama, and Peru will be the major countries represented in this general survey of the music of Latin America. The course will be taught in a lecture-discussion format with extensive use made of recordings, slides, and films. Some actual performance of drumming traditions will be included.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1340 - MUSIC IN AFRICA

Minimum Credits: 3
Maximum Credits: 3
This course examines the historical social and cultural background of music in Africa with particular reference to music in community life, performing groups, the training of musicians, instrument structures in African music, and the interrelations of music and dance. (Slides, films, and recordings will be used to illustrate lectures.)
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1341 - WEST AFRICAN PERFORMING ARTS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 1352 - MUSIC IN SOUTHEAST ASIA

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the musical cultures of southeast Asia; historical, social and cultural background of music, music theory, instruments, and selected musical genres from different countries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1356 - MUSIC IN THE MIDDLE EAST

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the musical cultures of the middle East and India; historical, social and cultural background of music, music theory, instruments, and selected musical genres from different countries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
MUSIC 1358 - MUSIC IN SOUTH ASIA

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the musical cultures of South Asia; historical, social and cultural background of music, music theory, instruments, and selected musical genres from different countries.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1360 - ROMANI / GYPSY MUSIC

Minimum Credits: 3
Maximum Credits: 3
Gypsy music has emerged as one of the most popular world music genres in the last two decades. The genre's success on the world stage is closely connected with the Romani (gypsy) minority rights movement, which has strengthened on local, national, and international levels due to increased education opportunities for roam, and more positive representation in the media. The present proliferation and popularization of a great variety of musical styles marketed as 'gypsy' points to the fact that Romani musical expressions draw their musical characteristics from Romani and non-Romani elements. Styles are differentiated according to time, place, and cultural influences with regard to ornamentation, language choice, vocal timbres, and choice of instruments. This course analyzes the musical varieties within genres marketed as 'gypsy' and offers broader political, economic, and historical perspectives on a variety of factors rooted in race, ethnicity, gender, and class relations that have contributed to contemporary understandings of 'gypsy' music.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1362 - ROMANI MUSIC CULTURE AND HUMAN RIGHTS

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MUSIC 1364 - MUSIC OF INDIA: THEORY AND PRACTICE

Minimum Credits: 3
Maximum Credits: 3
History and performance will educate students on several important aspects of Indian music and create an opportunity for them to perform Indian music in an ensemble. The performance repertoire will cover Indian classical, semi-classical and popular music, mainly from North Indian traditions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1396 - MUSIC IN SOCIETY

Minimum Credits: 3
Maximum Credits: 3
This course will explore critical perspectives on topics such as non-normative music history, queer modes of expression, subcultural music-making, and the implications of mainstream visibility. Along the way, the course will survey some notable lesbian/gay/bisexual/ transgender/queer composers and musicians in both art music and popular music. Course materials include readings, recordings, and possibly musical events and current media.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
MUSIC 1398 - WOMEN & MUSIC CROSS-CULTL PERSP

Minimum Credits: 3
Maximum Credits: 3
This course is concerned with music of, by, and about women from a cross-cultural perspective. Topics include, but are not limited to, traditional and ritual music, music as empowerment, sexual aesthetics, women as composers and performers, and feminist music criticism.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1421 - COMPOSITION 1

Minimum Credits: 3
Maximum Credits: 3
An introduction to the craft of musical composition, students receive individual instruction in composition, and usually create works using materials from the "common practice" period studied in MUSIC 0417 and 0419. Ability to read music notation fluently.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MUSIC 0417 and 0419

MUSIC 1422 - COMPOSITION 2

Minimum Credits: 3
Maximum Credits: 3
Starting from the novel premise that two of the most important considerations for composers are 1) how their music sounds and 2) what listeners hear in it, this course explores strategies to develop, edit and otherwise improve the conception, notation, performance and reception of student's compositions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1431 - INSTRUMENTATION & ORCHESTRATION

Minimum Credits: 3
Maximum Credits: 3
A survey of different styles of instrumentation and orchestration in the European art music tradition. Focus of the course may change from year to year.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1441 - ELECTRONIC AND COMPUTER MUSIC 1

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to composing music in the university of Pittsburgh electroacoustic music studio. Instruction in midi sequencing, introduction to synthesis, sampling, and other digital audio technology.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

MUSIC 1442 - ELECTRONIC AND COMPUTER MUSIC 2
Minimum Credits: 3  
Maximum Credits: 3  
This course is a continuation of MUSIC 1441. It provides further experience in composing music in the university of Pittsburgh computer and electronic music studio, instruction in the advanced digital audio applications, and hard disk recording and editing.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: MUSIC 1441  

MUSIC 1443 - PROGRAMMING ENVIRONMENTS IN MUSIC - AN INTRODUCTION TO MAX/MSP  
Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  

MUSIC 1450 - MUSIC PRODUCTION AND RECORDING  
Minimum Credits: 3  
Maximum Credits: 3  
With the rapid changes taking place in the music industry, it is incumbent that all aspiring musicians and performing artists understand the means and methods of music production and recording. Throughout the semester, students will enjoy (1) hands-on experience, (2) recording projects with guest artists in class, (3) learning simple editing and mastering two-track (stereo) recording, and (4) learning to mix and master multi-track recordings. In-class projects will include actual recording of performers (mainly from the class) with an emphasis on Jazz. Upon completion, students will be able to organize and execute recording sessions of their own. Readings will be assigned throughout the semester; quizzed and individual projects will be used to assess students.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  

MUSIC 1725 - JAZZ AND PROTEST  
Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  

MUSIC 1731 - JAZZ COMPOSITION AND ARRANGING 1  
Minimum Credits: 3  
Maximum Credits: 3  
This course develops the students' knowledge of the techniques of jazz-rock composition and arranging. The distinctive features of jazz-rock harmony are studied, and students write arrangements for various instrumental combinations.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  

MUSIC 1732 - JAZZ COMPOSITION AND ARRANGING 2  
Minimum Credits: 3  
Maximum Credits: 3  
A continuation of music 1731. The course develops the student's knowledge of the techniques of jazz-rock composition and arranging. The
distinctive features of jazz-rock harmony are studied, and students write arrangements for various instrument combinations.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**MUSIC 1741 - JAZZ IMPROVISATION 1**

Minimum Credits: 3  
Maximum Credits: 3  
This course provides an analysis of the techniques of jazz-rock-pop improvisation. Students develop a repertoire of current standards and compose and analyze pieces in several styles.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**MUSIC 1742 - JAZZ IMPROVISATION 2**

Minimum Credits: 3  
Maximum Credits: 3  
A continuation of music 1741. The course provides an analysis of the techniques of jazz-rock-pop improvisation. Students develop a repertoire of current standards and compose and analyze pieces in several styles.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**MUSIC 1900 - MUSIC INTERNSHIP**

Minimum Credits: 1  
Maximum Credits: 3  
The music internship provides majors with opportunities to develop skills in music-related professions. Students are responsible for finding an appropriate internship that is approved by a faculty member in music who agrees to oversee the student's work. May be taken for 1-3 credits, based on University guidelines relating to internship requirements. A maximum of 3 credits may be applied toward a music major.  
**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Letter Grade

**MUSIC 1901 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 3  
Independent study is elected by students who are making significant use of university resources in an independent project not related to any regularly offered course. The project is often off campus, but with some guidance from sponsoring faculty member(s).  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**MUSIC 1903 - SPECIAL TOPICS-DIRECTED RESEARCH**

Minimum Credits: 1  
Maximum Credits: 3  
This course consists of an individual project, exploring a topic not currently covered by any course offering. The student plans and carries out a research project in conjunction with a supervising faculty member.  
**Academic Career:** Undergraduate
MUSIC 1904 - SENIOR SEMINAR

Minimum Credits: 3
Maximum Credits: 3
The seminar is required of students wishing to earn a major in music. The topic of the seminar changes, but participants are expected to produce a major research project or other approved project displaying the ability to work independently at an advanced level.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

MUSIC 1970 - UNDERGRADUATE TEACHING ASSISTANT EXPERIENCE

Minimum Credits: 1
Maximum Credits: 3
This course involves student participation as an Undergraduate teaching assistant (UTA) for a music course under the supervision of a faculty member.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

NPHS 1510 - FEDERAL AND INTERNATIONAL FRAMEWORK FOR EMERGENCY PREPAREDNESS

Minimum Credits: 3
Maximum Credits: 3
NPHS 1510 covers overarching frameworks for the federal government's planning and response to crises. These include the National Response Framework (NRF) and the National Incident Management Systems (NIMS), which establishes the Incident Command System (ICS) and the Emergency Support Functions (ESFs). Because the federal government is the interface with foreign governments for events with transnational elements, international aspects of crisis management and the international context for threat assessment are covered in this course.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: National Prep & Homeland Secur (CERT-1)

NPHS 1520 - STATE AND LOCAL FRAMEWORK FOR EMERGENCY PREPAREDNESS

Minimum Credits: 3
Maximum Credits: 3
All response to crisis begins locally. NPHS 1520 presents ways in which states, regions and localities have implemented response planning for their jurisdictions. It also explores boundaries between federal and state law, and how, for example, decisions are made for evacuation versus sheltering in place. Case studies and models for drafting response plans will be offered and rehearsed, as well as templates for planning and allocation of resources.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: National Prep & Homeland Secur (CERT-1)

NPHS 1530 - ANALYSIS, INTELLIGENCE AND DECISION TOOLS FOR EMERGENCY PREPAREDNESS

Minimum Credits: 3
Maximum Credits: 3
Efforts to professionalize the emergency management workforce include familiarizing the next generation with modern decision support software.
and analytical tools now used in planning and responding to crises. These include discrete- and agent-based simulation, geographical information systems, pattern recognition, virtual reality and predictive modeling tools. This course will offer introductory experience with these tools in realistic crisis scenarios. NPHS 1530 also will explore realities that are changing the delivery of emergency services to a model based on distributed versus centralized operations.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: National Prep & Homeland Secur (CERT-1)

NPHS 1540 - CAPSTONE COURSE IN EMERGENCY PREPAREDNESS

Minimum Credits: 3
Maximum Credits: 3
Along the lines of workshops conducted by the Defense Advanced Research Projects Agency (DARPA), the capstone course is dedicated to exploring a variety of solutions to a single, complex, interdisciplinary problem - a "wicked" problem - in emergency management. "Wicked" problems are complex problems for which there is an unlimited number of potential solutions, but choosing among them is difficult because they have huge impacts and there are no immediate or ultimate tests of their worth - they are neither true nor false but good or bad. The "wicked" problem considered in NPHS 1540 may change from term to term to meet emerging demands or class composition.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: National Prep & Homeland Secur (CERT-1)

NPHS 1800 - PUBLIC HEALTH PREPAREDNESS AND EMERGENCY RESPONSE

Minimum Credits: 3
Maximum Credits: 3
This course teaches Undergraduates and post-baccalaureate students about the responsibilities, roles, and functions of public health in disaster planning, mitigation, response, and recovery. All classes use real-life disasters and emergencies as learning modules. The course is divided into 3 modules: module 1 covers the role and function of public health in the United States both historically and with the addition of more explicit disaster preparedness and response functions in recent years. Module 2 covers public health priorities and functions in all major forms of disasters, with a particular emphasis on environmental health emergencies, pandemics, and bioterrorism. Module 3 covers organized and spontaneous response activities, including how communities work together (or not) to deal with a wide variety of threats.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: National Prep & Homeland Secur (CERT-1)

NPHS 1900 - INTERNSHIP

Minimum Credits: 3
Maximum Credits: 3
Students registered for NPHS 1900 pursue an internship involving work related to national preparedness and emergency management. Students are responsible for securing internships and a faculty member to sponsor the internship. Students should produce academic work in conjunction with their internship, which the faculty sponsor will evaluate and grade. Faculty permission is required prior to enrollment. Consult an advisor for further information.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit
Course Requirements: PLAN: National Prep & Homeland Secur (CERT-1)

NPHS 1901 - INDEPENDENT STUDY
Minimum Credits: 3  
Maximum Credits: 3  
Students registered for NPHS 1901 pursue research on a project related to national preparedness and emergency management under the direction of a faculty member. Students develop a study plan with the faculty member, typically working independently on a paper or report, with occasional meetings. Faculty permission is required prior to enrollment. Consult an advisor for further information.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: Satisfactory/No Credit  
Course Requirements: PLAN: National Prep & Homeland Secur (CERT-1)

NROSCI 0080 - BRAIN AND BEHAVIOR

Minimum Credits: 3  
Maximum Credits: 3  
This course analyzes the relations between brain function and overt behaviors. Topics include: the control of movement, sensory processing, mechanisms controlling sleep, arousal, and other circadian rhythms, hunger and thirst, learning and memory, the biological bases of neuropsychiatric disorders, and the functioning of the cerebral hemispheres. Many clinical disorders will be discussed including language disorders, amnesia, epilepsy, depression, anxiety, schizophrenia, and Alzheimers disease.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

NROSCI 0081 - DRUGS AND BEHAVIOR

Minimum Credits: 3  
Maximum Credits: 3  
This course provides a general background in the fields of neuroscience and psychopharmacology. The course examines the behavioral effects and biological mechanisms of action of the major groups of psychoactive compounds, including stimulants, depressants, narcotics, and hallucinogens. Drugs used in the treatment of common psychiatric neurological disorders, such as schizophrenia, depression, and Parkinson's disease, will also be discussed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

NROSCI 0083 - UHC BRAIN AND BEHAVIOR

Minimum Credits: 4  
Maximum Credits: 4  
This course examines the function of the mammalian nervous system. Specific topics include sensation, movement, sleep and wakefulness, hunger, thirst, and various neurological and psychiatric disorders. One class meeting per week will discuss some of the original research articles presented in the general lectures. This course has no prerequisites, although BIOSC 0150 or its equivalent is recommended.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

NROSCI 1000 - INTRO TO NEUROSCIENCE

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the anatomy, physiology, and pharmacology of the central and peripheral divisions of the nervous system. Specific topics covered include neuronal function, synaptic transmission, sensory processing, movement, sleep and wakefulness, hunger, thirst, caloric and body fluid homeostasis, recovery of function after brain damage, and various neurological and psychiatric disorders.  
Academic Career: Undergraduate  
Course Component: Lecture
NROSCI 1003 - UHC INTRODUCTION TO NEUROSCIENCE

Minimum Credits: 4
Maximum Credits: 4
This honors course examines the anatomy, physiology, and pharmacology of the central and peripheral divisions of the nervous system. Specific topics include neuronal function, synaptic transmission, sensory processing, movement, sleep and wakefulness, hunger, thirst, caloric and body fluid homeostasis, recovery of function after brain damage, and various neurological and psychiatric disorders. Course includes in-depth discussions of original research articles presented in the general lectures.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements:
(BIOSC150or170or715or190orBIOL101or110)and(BIOSC160or180or191or716orBIOENG1071orBIOL102or120)and(CHEM101or110or710or760or960orCHEM111or410)and(CHEM102or120or720or770or970)or(CHEM420and440)or(CHEM112and114);MINGRAD: 'C' for listed Courses
LVL:Fr,So,Jr;MINGPA3.25

NROSCI 1011 - FUNCTIONAL NEUROANATOMY

Minimum Credits: 3
Maximum Credits: 3
This course deals with human neuroanatomy and covers the basic structure of the central nervous system from spinal cord to cerebral cortex. Emphasis is placed on major systems and subsystems within the brain, and on their functional significance. The basic structure and morphology of nerve cells will be covered.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements:
PREQ: NROSCI 1000 or 1003; MIN GRADE: 'B-' for listed courses; PLAN: Neuroscience (BS or MN)

NROSCI 1012 - NEUROPHYSIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course examines the functioning of neurons and synapses, the basic units responsible for fast communication within the nervous system. The course focuses on the elegant use of electrical mechanisms by the nervous system, and on the powerful quantitative approach to scientific investigation that is fundamental to neurophysiology. Topics include: principles of electric current flow exploited by the nervous system; the basis of the resting potential of neurons; the structure and function of voltage-gated and neurotransmitter-gated ion channels; the generation and propagation of action potentials; the physiology of fast synaptic communication.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements:
PREQ: [NROSCI 1000 (MIN GRADE 'B-') or NROSCI 1003 (MIN GRADE 'B-')] and (CHEM 0120 or 0720 or 0770 or 0960 or 0102 or 0112) and (PHYS 0110 and 0111 or 0174 and 0175) and MATH 0220; PLAN: Neuroscience (BS or MN)

NROSCI 1013 - FUNCTIONAL NEUROANATOMY (UHC)

Minimum Credits: 4
Maximum Credits: 4
This is an honors course that deals with issues of how we can understand the function of the human brain through the study of neurological diseases. The manifestations of selected neurological diseases are presented and discussed in the context of how they can be analyzed and understood through
application of the findings from basic research in neuroscience.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### NROSCI 1014 - SPEAKING OF SCIENCE

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students will learn strategies for giving presentations about science to both a scientific audience and a public audience. Topics covered will include 1) how to engage our audience, 2) the art of breaking down your message, 3) tips to make clear, interesting slides, and 4) pointers on presentation style. All audiences want to learn interesting new scientific information, and have it delivered as a good story in an understandable manner by a personable, easy to approach person. Communication skills, including knowing your audience and why they are interested in the information you are speaking about, how to translate scientific jargon into understandable concepts for the public, and how to keep the audience engaged will be discussed. Pointers will be given on answering questions, being conversational, and conveying the "big picture". Students will give a number of presentations in this course and learn to receive and give feedback effectively.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: NROSCI 1000 or NROSCI 1003 (BOTH MIN GRADE 'B-'); PLAN: Neuroscience (BS or MN)

### NROSCI 1017 - SYNAPTIC TRANSMISSION

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines the mechanisms by which neurotransmitters are synthesized and released and the biochemistry of synaptic responses. Basic physiological, biochemical, and morphological characteristics of neuronal transmission will be discussed. An emphasis will be placed on the experimental approaches used to examine these processes.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: NROSCI 1000 or 1003; MIN GRADE 'B-' for Listed Courses

### NROSCI 1018 - UHC NEUROPHYSIOLOGY

**Minimum Credits:** 4  
**Maximum Credits:** 4

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### NROSCI 1026 - FOUNDATIONS OF CLINICAL NEUROPHYSIOLOGY

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is a three credit advanced elective course that will cover the fundamental and basic principles used in the practice of clinical neurophysiology with the goal of providing an overview of both basic science and clinical topics relevant to performing intraoperative neurophysiological monitoring in a surgical setting. Topics will include anatomy and physiology of the motor and sensory systems and the theoretical basis of electroencephalography, sensory and motor evoked potentials, electromyography, transcranial Doppler and compound action potentials. Students will be able to explain the practical applications of these techniques in the diagnosis of nervous system disorders and in the continuous monitoring of the integrity of the human nervous system during surgical procedures.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: NROSCI 1000 (MIN GRADE: 'B-') or 1003 (MIN GRADE: 'B-') and (NROSCI 1011 or 1013) and (NROSCI 1012 or 1018); PLAN: Neuroscience (BS or MN)

**NROSCI 1027 - NEUROSCIENCE PROSEMINAR**

*Minimum Credits:* 2  
*Maximum Credits:* 2  
Program graduate students, postdoctoral fellows, and faculty will present an overview of their respective research topics and discussion of current research articles on that topic. Critical analysis of experiments and research is emphasized.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: NROSCI 1000 or 1003; MIN GRADE: 'B-' for listed courses; PLAN: Neuroscience (BS or MN)

**NROSCI 1028 - SIGNALING PATHWAYS IN SYNAPTIC PLASTICITY**

*Minimum Credits:* 3  
*Maximum Credits:* 3  
This class focuses on signaling mechanisms, which underlie long-term synaptic plasticity. It will address the molecular pathways, which regulate thresholds for synaptic plasticity, the synaptic machinery for induction and expression of long-term synaptic plasticity and how it is converted to structural changes of the neural network, which might underlie the consolidation of memory. The presentations will be guided by experimental approaches, which have influenced the conceptual framework.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Neuroscience (BS or MN); PREQ: NROSCI 1000 or 1003 (MIN GRADE: B- for listed courses)

**NROSCI 1030 - PSYCHTRC DISORDERS AND BRAIN FUNCTION**

*Minimum Credits:* 3  
*Maximum Credits:* 3  
This course examines the neurobiological basis of psychiatric disturbances (including schizophrenia, depression, Parkinson's disease, and Huntingtons chorea). The initial portion presents an overview of basic neuropharmacology, with an emphasis on recent findings of relevance to psychiatric disorders. The major portion consists of lectures on the anatomical, physiological, and neurochemical bases for specific psychiatric disturbances, and the mechanism of action of therapeutic drugs used in their treatment. A strong neuroscience background is required.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: [NROSCI 1000 (MIN GRADE 'B-') or NROSCI 1003 (MIN GRADE 'B-')], NROSCI 1011 or NROSCI 1013; PLAN: Neuroscience (BS or MN)

**NROSCI 1032 - FUNCTIONAL ORGANIZATION OF THE HUMAN NERVOUS SYSTEM**

*Minimum Credits:* 3  
*Maximum Credits:* 3  
The intent of this course is to examine the biological basis of neurological dysfunction and to use this information to gain further insight into the functional organization of the human nervous system. A disease oriented approach will be used to illustrate localization of function. Well known clinical cases will define the functional consequences of disease or damage to regions of the brain and current information on the mechanisms underlying the disease process or physical damage will be used to provide further insight into the functional alterations that contribute to the deficit.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: NROSCI 1000 (MIN GRADE 'B-') or 1003 (MIN GRADE: 'B-') and NROSCI 1011 or NROSCI 1013; PLAN: Neuroscience (BS or MN)
NROSCI 1033 - NEURAL BASIS OF VISION

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the neural basis of visual perception and action. It is divided into four units. The first unit covers methods for studying visual perception and its neural basis and discusses the neural hardware that underlies our ability to see. The second unit covers object recognition, cognitive factors that influence visual perception, and how the way we are planning to use visual information affects the way it is encoded in the brain. Unit three focuses on perceptual decision-making and using visual motion as a model system. We will also touch on some data analysis methods for using psychophysical and neuronal data to figure out how we make decisions based on visual information. The fourth unit will focus on perception of color and depth and on how visual perception develops after birth. Throughout the course, we will focus on what neural mechanisms can tell us about how we perceive the visual world and on how we can design experiments to better understand the relationship between neural mechanisms and perception.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (NROSCI 1000 or NROSCI 1003 (MIN GRADE 'B-')) and NROSCI 1011 or 1013; PLAN: Neuroscience (BS or MN)

NROSCI 1034 - NEURAL BASIS OF COGNITION

Minimum Credits: 3  
Maximum Credits: 3  
This advanced elective is designed for students interested in learning about the neural basis of higher order cognitive functions, with an emphasis on cortical mechanisms. Topics will include: occipitotemporal mechanisms of visual perception; parietal mechanisms of spatial attention and vision for action; premotor mechanisms of action planning and movement execution; prefrontal mechanisms of working memory and behavioral control; hippocampal mechanisms of episodic memory; multimodal integration and cognitive effort.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: NROSCI 1000or 1003 (Min Grad 'B-') and NROSCI 1011 or NROSCI 1013; PROG: School of Arts & Sciences; PLAN: Neuroscience (BS or MN)

NROSCI 1036 - NEUROBIOLOGY OF AGING

Minimum Credits: 3  
Maximum Credits: 3  
This course examines age-related changes in neurobiological systems, including motor, sensory, cognitive, and neuroendocrine. Emphasis will be placed on distinguishing biochemical, molecular, physiological, and behavioral changes associated with normal aging versus changes associated with pathologic conditions such as Alzheimer's disease. Introductory lectures will discuss different theories of aging, how aging is studied in the laboratory, and how these relate specifically to neuroscience.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: [NROSCI 1000 (MIN GRADE 'B-') or NROSCI 1003 (MIN GRADE 'B-')] and NROSCI 1011 or NROSCI 1013; PLAN: Neuroscience (BS or MN)

NROSCI 1040 - BIO BASES OF LEARNING AND MEMORY

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to provide an overview on the neural basis of simple learned behavior like classical conditioning. Topics covered include experimental results obtained by anatomical, electrophysiological and biochemical techniques. Emphasis will be placed on research undertaken in invertebrate and vertebrate models, as well as in isolated mammalian preparations.  
Academic Career: Undergraduate
NROSCI 1041 - DEVELOPMENTAL NEUROSCIENCE

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NROSCI 1000 (MIN GRADE: 'B-') or 1003 (MIN GRADE: 'B-') and (NROSCI 1012 or 1018) and NROSCI 1017; PLAN: Neuroscience (BS or MN)

Minimum Credits: 3
Maximum Credits: 3
This course is designed to provide an overview of issues that govern the developmental assembly of a complex nervous system. Topics covered include formation of neural tube and neural crest, birth and proliferation of neurons, cell migration, neuronal differentiation, molecular control of neural development, synapse formation, neuron-target interactions, and synaptic plasticity. These topics will be discussed in the context of experimental results obtained by anatomical, biochemical and electrophysiological techniques using vertebrate and invertebrate animals.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NROSCI 1000 or 1003; MIN GRADE: 'B-' for listed courses; PLAN: Neuroscience (BS or MN)

NROSCI 1042 - NEUROCHEMICAL BASIS OF BEHAVIOR

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NROSCI 1000 or 1003 (MIN GRADE: 'B-'); PLAN: Neuroscience (BS or MN)

Minimum Credits: 3
Maximum Credits: 3
Neurochemistry is the study of the many chemicals - neurotransmitters, neuromodulators, hormones, and more - that influence the brain and nervous system. This class will focus on understanding the role of various neurochemicals in normal (and some abnormal) behavior, from behaviors that seem simple - like eating and sleeping - to complex cognition and social behavior. After an initial unit on neurochemical structure, classification, and signaling pathways, we will segue into topics including sleep and circadian rhythms; sex and social status; reward pathways and addiction; and decision-making. We will also examine the neurochemical basis of selected psychiatric disorders.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NROSCI 1000 or 1003 (MIN GRADE: 'B-'); PLAN: Neuroscience (BS or MN)

NROSCI 1043 - NEURAL PLASTICITY

Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NROSCI 1000 (MIN GRADE: 'B-') or 1003 (MIN GRADE: 'B-'); PLAN: Neuroscience (BS or MN)

Minimum Credits: 3
Maximum Credits: 3
This class is designed to establish conceptual and technical foundations for students who are interested in plasticity-associated neuroscience. Whereas the class will go through major findings in the plasticity field, the emphasis will be placed on why these findings are important, how these findings were made, and what challenges/debates these findings trigger.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NROSCI 1000 (MIN GRADE: 'B-') or 1003 (MIN GRADE: 'B-'); PLAN: Neuroscience (BS or MN)

NROSCI 1045 - TOPICS IN NEUROSCIENCE

Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (NROSCI 1000 or 1003); MIN GRAD: 'B-' for all listed Courses; PROG: School of Arts and Sciences

Minimum Credits: 1
Maximum Credits: 6
Flexible subject matter oriented to special topics of interest to the faculty.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (NROSCI 1000 or 1003); MIN GRAD: 'B-' for all listed Courses; PROG: School of Arts and Sciences
NROSCI 1046 - TOPICS IN NEUROSCIENCE
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NROSCI 1000 (MIN GRADE: 'B-') or 1003 (MIN GRADE: 'B-'); PLAN: Neuroscience (BS or MN)

NROSCI 1047 - TOPICS IN NEUROSCIENCE
Minimum Credits: 2
Maximum Credits: 2
Flexible subject matter oriented to special topics of interest to the faculty.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: NROSCI 1801; PLAN: Neuroscience (BS or MN)

NROSCI 1048 - UHC TOPICS IN NEUROSCIENCE RESEARCH
Minimum Credits: 2
Maximum Credits: 2
The goal of this course is to learn how to read articles in the field of neuroscience. Assigned readings are the original articles based on laboratory research that provided the source of information concerning three topics: neuroplasticity, hunger and the brain's control of food intake, and thirst and the brain's control of fluid intake.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

NROSCI 1049 - RESEARCH TOPICS IN NEUROSCIENCE
Minimum Credits: 1
Maximum Credits: 1
This course is required for all newly declared majors. This course will provide students with an overview of research conducted by neuroscience faculty and familiarize students with potential research topics.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Satisfactory/No Credit
Course Requirements: PREQ: NROSCI 1000 or 1003; MIN GRADE: 'B-' for listed courses; PLAN: Neuroscience (BS); LEVEL: SOPHMORE, JUNIOR, SENIOR

NROSCI 1070 - HUMAN PHYSIOLOGY-UHC
Minimum Credits: 4
Maximum Credits: 4
Lectures and reading on the following: (1) functions of the cardiovascular system; (2) respiration; (3) digestion and absorption in the gut; (4) kidney function and the regulation of body fluids; (5) the regulation of metabolism; and (6) reproduction.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (BIOSC 0160 or 0180 or 0191 or 0716 or BIOENG 1071 or 1072 or BIOL 0102 or 0120) and [CHEM 0102 or 0120 or 0720 or 0770 or 0970 or (CHEM 0112 and 0114)]; MIN GRADE 'C' for all listed courses
NROSCI 1097 - UNDERGRADUATE TEACHING EXPERIENCE

Minimum Credits: 1
Maximum Credits: 2
This course is intended for neuroscience majors who wish to assist faculty in the teaching of a NROSCI core course or a NROSCI advanced elective. Students and faculty meet regularly to discuss the important topics for each week and effective teaching techniques.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

NROSCI 1111 - FUNCTIONAL NEUROANATOMY HONORS PRACTICE

Minimum Credits: 2
Maximum Credits: 2
This is an honors course that supplements NROSCI 1011 by using several approaches to study the functional organization of the nervous system. Examples of such approaches are studying human and animal brain material and discussing important original papers in neuroanatomy.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NROSCI 1001 or NROSCI 1003 (BOTH MIN GRADE 'B-'); PLAN: Neuroscience (BS or MN)

NROSCI 1140 - BIO BASIS OF LEARNING AND MEMORY-UHC

Minimum Credits: 4
Maximum Credits: 4
This course is designed to provide an overview on the neural basis of simple learned behavior like classical conditioning. Topics covered include experimental results obtained by anatomical, electrophysiological and biochemical techniques. Emphasis will be placed on research undertaken in invertebrate and vertebrate models, as well as in isolated mammalian preparations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (NROSCI 1001 or NROSCI 1003 (BOTH MIN GRADE 'B-')) and (NROSCI 1012 or 1018) and NROSCI 1017; PLAN: Neuroscience (BS or MN); Cumulative Grade Point Average 3.25 or better

NROSCI 1200 - NEUROPHARMACOLOGY OF ADDICTION

Minimum Credits: 3
Maximum Credits: 3
This course is designed to provide an overview of the biological basis of addiction and the neuropharmacology of drugs of abuse and dependence, including basic principles of drug action as well as comprehensive coverage of the major classes of drugs (opioids, stimulants, nicotine, alcohol, sedatives, cannabis, hallucinogens). Students will study mechanisms of action, effects, pharmacokinetics as well as tolerance and dependence for each of these drugs/drug classes. The reasons for addiction including biological, genetic, cultural and other determinants will be discussed. Students will learn about laboratory-based methods used in addiction research, common pharmacotherapies used to manage alcohol and drug addiction, and consider public health issues associated with addiction.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NROSCI 1001 or 1003; MIN GRADE 'B-' for all listed courses

NROSCI 1250 - HUMAN PHYSIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course begins with a general introduction on cell biology, physiology of nerves and muscle, and intercellular communication. The course will
then survey the function of the following systems: cardiovascular, respiratory, renal, and gastrointestinal. Each system discussed will be integrated into the larger function of homeostasis, emphasizing its adaptation during pathology and challenges (e.g., exercise). The formal lectures will be supplemented by a required recitation.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:**  
PREQ: (BIOSC 0160 or 0716 or 0191 or 0180 or BIOENG 1071 or BIOENG 1072 or BIOL 0102 or 0120) and [(CHEM 0120 or 0720 or 0770 or 0970 or 0102 or (0112 and 0114)); Min Grade 'C' for all courses listed

**NROSCI 1410 - TRANSLATING SCIENCE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students will work in creative teams of 2-3 students/team to develop creative new outreach tools for communication of science to the public (new lectures, videos, films, activities). At the beginning of the semester, didactic lectures will cover background information about how to effectively communicate scientific information, how to break down a message, production of effective engaging slides, animations and videos, and the use of hands-on activities to engage the audience. Guest speakers with expertise in film, video and use of museum exhibits will be included. Students will then choose a topic area they wish to create an outreach lecture/video/etc. In, and with the assistance of Dr. Cameron will choose a scientific advisor with specific expertise on the topic for which an outreach tool will be developed. Students will do background reading for the development of their outreach tool and have discussions with their advisor. If developing a lecture, students will develop a set of PowerPoint slides for the lecture, the lecture text with background references, and hands-on activities to complement the lecture for both a junior high and high school version of the lecture. They will present the lecture to one of the grade levels for which it was designed. For other activities, the activity will be developed along with background information regarding the use of the activity. The activity will be presented to a public group.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:**  
PREQ: NROSCI 1000 or NROSCI 1003 (BOTH MIN GRADE 'B-') and NROSCI 1014; PLAN: Neuroscience (BS or MN)

**NROSCI 1800 - NEUROSCIENCE/Writing Practicum**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
This course is restricted to neuroscience majors & minors and fulfills the writing requirement for the major. It includes extra emphasis on and credit for instruction in proper writing for the discipline of neuroscience using topics from an appropriate co-requisite neuroscience course taken in the same term.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:**  
PREQ: (ENGCMP 0200 or 0201) or (FP 0003); CREQ: NROSCI 1014 or 1028 or 1032 or 1034 or 1042 or 1043 or 1140 or 1040 or 1042 or 1043 or 1140 or 1200 or 1027; PLAN: Neuroscience (BS or MN)

**NROSCI 1801 - Neurosciences/Writing Practicum**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
This course is restricted to neuroscience majors & minors and fulfills the writing requirement for the major. It includes extra emphasis on and credit for instruction in proper writing for the discipline of neuroscience using topics from an appropriate co-requisite neuroscience course taken in the same term.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:**  
PREQ: (ENGCMP 0200 or 0201) or (FP 0003); CREQ: NROSCI 1014 or 1028 or 1032 or 1034 or 1140 or 1040 or 1043 or 1200 or 1027; PLAN: Neuroscience (BS or MN)
NROSCI 1900 - INTERNSHIP EXPERIENCE

Minimum Credits: 1
Maximum Credits: 3
Students may earn 1-3 credits for approved, supervised field experiences related to neuroscience. A faculty sponsor must agree to provide and review academic assignments related to the practical experience.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

NROSCI 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
This course involves student participation in neuroscience research supervised by a faculty member of the department of neuroscience or some other department in which neuroscience research is performed. This course is particularly valuable for students interested in graduate study of neuroscience.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

NROSCI 1903 - INTERNSHIP CAPSTONE

Minimum Credits: 3
Maximum Credits: 6
Students may earn 1-3 credits for approved, supervised field experiences related to neuroscience. A faculty sponsor must agree to provide and review academic assignments related to the practical experience.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Letter Grade

NROSCI 1961 - THESIS RESEARCH

Minimum Credits: 1
Maximum Credits: 6
This course involves independent neuroscience research leading to the preparation and defense of a written thesis. This course involves student participation in neuroscience research supervised by a faculty member of the department of neuroscience or some other department in which neuroscience research is performed.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

NROSCI 1962 - THESIS RESEARCH/Writing Practicum

Minimum Credits: 1
Maximum Credits: 1
This course involves writing a thesis based on independent neuroscience research that is supervised by a faculty member of the department of neuroscience or some other department in which neuroscience research is performed.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

NROSCI 2014 - SPEAKING OF SCIENCE
Minimum Credits: 3
Maximum Credits: 3
Fulfills neuroscience advanced elective requirement. You will learn strategies for giving presentations about science to both a scientific audience and a public audience. Topics covered will include (1) how to engage your audience, (2) the art of breaking down your message, (3) tips for how to make clear, interesting slides, and (4) pointers on presentation style. All audiences want to learn interesting new scientific information, and have it delivered as a good story in an understandable manner by a personable, easy to approach person. You want to emphasize your message, stay focused, and convey the importance of your message while being interesting, maintaining the attention of the audience and making the learning process enjoyable. Guest speakers will provide background information about various uses of scientific information in the public domain. Communication skills, including knowing your audience and why they are interested in the information you are speaking about, how to translate scientific jargon into understandable concepts for the public, and how to keep the audience engaged will be discussed. Pointers will be given on answering questions, being conversational, and conveying the "big picture". Students will give a number of presentations in this course and learn to receive and give feedback effectively.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Neuroscience (PhD) or Neurobiology (PhD)

NROSCI 2410 - TRANSLATING SCIENCE

Minimum Credits: 3
Maximum Credits: 3
Students will work in creative teams of 2-3 students/team to develop creative new outreach tools for communication of science to the public (new lectures, laboratories, videos, films, activities). At the beginning of the semester, didactic lectures will cover background information about how to effectively communicate scientific information, how to break down a message, production of effective, engaging slides, animations and videos, and the use of hands-on activities to engage the audience. Guest speakers with expertise in film, video and use of museum exhibits will be included. Students will then choose a topic area they wish to create an outreach lecture/video/etc. In, and with the assistance of Dr. Cameron you will choose a scientific advisor with specific expertise on the topic you will develop an outreach tool for. Students will do background reading for the development of their outreach tool and have discussions with their advisor. If developing a lecture, students will develop a set of PowerPoint slides for the lecture, the lecture text with background references, and hands-on activities to complement the lecture for both a junior high and a high school version of the lecture. They will present the lecture at one of the grade levels it was designed for. For other activities, the activity will be developed along with background information regarding the use of the activity. The activity will be presented to a public group.

Academic Career: GRAD
Course Component: Lecture
Grade Component: GradLG/SU3

NUR 0001 - FIRST YEAR SEMINAR

Minimum Credits: 1
Maximum Credits: 1
This course is designed to provide beginning nursing students with an overview of the nursing profession and an introduction to the school of nursing. The purpose of the course is to facilitate the students' adjustment to the University environment and to acquaint them with the skills and resources available to promote success.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: H/S/U Basis
Course Requirements: School of Nursing students only.

NUR 0002 - NURSING ANATOMY AND PHYSIOLOGY LABORATORY 1

Minimum Credits: 1
Maximum Credits: 1
This laboratory course is designed to provide students with hands-on experience related to the anatomy and physiology of the human body. Laboratory sessions complement the lecture component of NUR 0012. Laboratory instruction emphasizes structure and how it relates to function and the maintenance of homeostasis in the whole body.

Academic Career: Undergraduate
NUR 0003 - NURSING ANATOMY AND PHYSIOLOGY LABORATORY 2

Minimum Credits: 1
Maximum Credits: 1
This laboratory course is designed to provide students with hands-on experience related to the anatomy and physiology of the human body. Laboratory sessions complement the lecture component of NUR 0013. Laboratory instruction emphasizes structure and how it relates to function and the maintenance of homeostasis in the whole body.

NUR 0005 - HONORS FRESHMAN SEMINAR

Minimum Credits: 1
Maximum Credits: 1
Using a flexible format, this course is designed to provide beginning nursing students with an overview of the University Honors College and the honors track within the school of nursing. The purpose of this course is to facilitate the students' exposure to the University of Pittsburgh Honors College environment, and to acquaint them with the opportunities and resources that are available to promote success in the honors track in the school of nursing.

NUR 0012 - HUMAN ANATOMY AND PHYSIOLOGY 1

Minimum Credits: 3
Maximum Credits: 3
This course is designed to present students with a basic foundation in normal human anatomy and physiology. Topics covered are: cell physiology, histology, integumentary, skeletal, muscular, nervous and sensory systems. Emphasis is on the interaction of structure and function and the mechanisms which maintain homeostasis in the human body.

NUR 0013 - HUMAN ANATOMY AND PHYSIOLOGY 2

Minimum Credits: 3
Maximum Credits: 3
This course is designed to present students with a basic foundation in normal human anatomy and physiology. Body systems covered include: endocrine, cardiovascular, respiratory, digestive, urinary, reproductive, and embryological development. Emphasis is on the interaction of structure and function and the mechanisms which maintain homeostasis in the human body.

NUR 0020 - PATHOPHYSIOLOGIC FOUNDATIONS OF NURSING CARE
Minimum Credits: 4
Maximum Credits: 4
This course will examine mechanisms that produce disease and injury, the ways in which the body responds to these mechanisms, and the clinical manifestations produced by the body's response.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 0013

NUR 0031 - MICROBIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This lecture course will introduce students to the basic properties of bacteria, archaea, eukaryotic microorganisms and viruses, with an emphasis on bacteria. The diversity within the microbial world will be emphasized, as well as their relevance to the health and diseases of humans. Approaches for controlling the growth of microbes in the environment and for preventing the spread of infectious diseases will also be discussed. In addition, students will also become familiar with host-microorganism interactions and host-immune responses.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: NUR 0032

NUR 0032 - MICROBIOLOGY LABORATORY

Minimum Credits: 1
Maximum Credits: 1
This laboratory course will provide students with hands-on experience in terms of the techniques used to detect, grow, isolate and identify microorganisms.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: Letter Grade

NUR 0051 - INTRODUCTION TO PROFESSIONAL NURSING

Minimum Credits: 3
Maximum Credits: 3
This course provides a broad overview and synthesis of the issues and trends most relevant to the practice of professional nursing. Historical, contemporary and potential influences on professional nursing practice are reviewed. An emphasis on the unique and varied roles of nurses in today's interdisciplinary health care environment are examined within the context of individual, family, community, and global health. Characteristics and major changes in health care delivery systems (federal, state, and local) are discussed. Components of professional nursing values and core practice competencies are presented. The concept of an evidence-based approach to clinical practice is introduced. Critical thinking strategies are introduced in the context of the nursing process.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Nursing students only.

NUR 0053 - INTRODUCTION TO INCLUSION, EQUITY, AND DIVERSITY IN HEALTH CARE

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: H/S/U Basis
NUR 0066 - NUTRITION FOR CLINICAL PRACTICE

Minimum Credits: 3
Maximum Credits: 3
This course focuses on nutrition for clinical practice for nurses. Food for energy and the major nutrients are considered for the promotion of health and for medical nutrition therapy for selected disruptions of health. Emphasis is placed on nutrition assessment and interventions in relation to the goals of the current healthy people document and dietary guidelines for Americans.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

NUR 0067 - NURSING RESEARCH: AN INTRODUCTION TO CRITICAL APPRAISAL AND EVIDENCE-BASED PRACTICE

Minimum Credits: 3
Maximum Credits: 3
The primary objective of this course is to assist students in becoming intelligent consumers of research to provide the basis for evidence-based practice and provision of culturally-congruent care. Students gain an understanding of the application of quantitative and qualitative research processes to the development of nursing knowledge and the contributions of research to the evidence base of nursing practice. Students are expected to implement the steps of evidence based practice. Students are to identify clinical problems and search the literature for information about the problem. Students are expected to critically appraise research articles, distinguish between useful, valid research and that which cannot or should not be applied to nursing practice.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 0080 or 0081

NUR 0080 - FOUNDATIONS OF NURSING PRACTICE 1

Minimum Credits: 3.5
Maximum Credits: 3.5
This course focuses on the concepts of communication, therapeutic intervention, and decision-making as they relate to the nursing process. Techniques of assessment of the physical, psychological, and developmental dimensions of the individual are explored through a variety of learning strategies. Variations of expected findings based on influences such as age, social condition, and culture are discussed. Emphasis is placed on the therapeutic interventions of safety, hygiene and comfort, health assessment and health promotion.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NUR 0003 and 0051; CREQ: NUR 0020 and 0087

NUR 0080C - FOUNDATIONS OF NURSING PRACTICE 1 CLINICAL

Minimum Credits: 2
Maximum Credits: 2
This course is designed to provide clinical experiences related to the theory provided in Foundations of Nursing Practice 1. Techniques used in the assessment of the physical, psychological and development dimensions of the individual within an acute care setting are demonstrated. Variations of findings based on influences such as age and culture are identified. Emphasis is placed on the therapeutic interventions of safety, hygiene and comfort, health assessment and health promotion.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 0080

NUR 0081 - FOUNDATIONS OF NURSING PRACTICE 2
Minimum Credits: 2  
Maximum Credits: 2  
This course builds on the fundamental skills learned in NUR 0080. The focus is on direct practice and correct manipulation of equipment during the performance of psychomotor skills. During laboratory sessions, students will have the opportunity to practice simulated clinical skills. The nursing process and clinical reasoning will serve as the framework for decision-making during skill performance. Through active laboratory participation, the student will demonstrate self-direction as a learner.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: NUR 0080 and 0020 and 0087 and 0080C; CREQ: NUR 0082

NUR 0082 - NURSING MANAGEMENT OF ADULT WITH ACUTE/CHRONIC HEALTH PROBLEMS

Minimum Credits: 3  
Maximum Credits: 3  
This course focuses on the nursing care of adults, including older adults, with acute and/or chronic illnesses. Students will be guided in critical thinking exercises and the use of therapeutic interventions and research findings in the management of adults. Nursing process, critical thinking, and decision-making serve as the framework for acquisition of knowledge for the management of patients. Societal and cultural influences will be emphasized.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: NUR 0020 and NUR 0080 and NUR 0087; CREQ: NUR 0081 and NUR 0082C

NUR 0082C - NURSING MANAGEMENT OF ADULT WITH ACUTE/CHRONIC HEALTH PROBLEMS CLINICAL

Minimum Credits: 4  
Maximum Credits: 4  
This course focuses on the nursing care of adults, including older adults, with acute and/or chronic illnesses. Students will be guided in critical thinking exercises and the use of therapeutic interventions and research findings in the management of adults with acute and/or chronic illnesses. During clinic, students will have the opportunity to practice clinical skills learned in the lab. Nursing process, critical thinking, and decision-making serve as the framework for acquisition of clinical psychomotor skills. Common concepts of care will be emphasized, including societal and cultural influences.  
Academic Career: Undergraduate  
Course Component: Clinical  
Grade Component: H/S/U Basis  
Course Requirements: CREQ: NUR 0082

NUR 0086 - NURSING INFORMATICS

Minimum Credits: 2  
Maximum Credits: 2  
This course focuses on concepts relevant to the practice of nursing informatics. The course emphasizes information technology applications and the principles of nursing informatics from a current and historical perspective. Learners will examine the analysis of healthcare data and its transformation to nursing knowledge. Nursing language concepts and their importance in clinical information system development will be identified. Learners will examine information technologies that manage clinical information and support patient care. Social and ethical issues in the context of clinical information systems will be examined. The impact of evolving/emerging information technologies on healthcare provider and consumer roles will be discussed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: School of Nursing students only.
NUR 0087 - PHARMACOLOGY AND THERAPEUTICS ACROSS THE LIFESPAN

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to pharmacology that integrates the concepts of physiology, pathophysiology, chemistry, and nursing fundamentals to build a foundation for administering drug therapy to patients. Using a simple to complex approach, key content areas are presented to help conceptualize the important components related to pharmacology. The basic concepts of pharmacology, such as drug testing and approval, pharmacokinetics and pharmacodynamics, pharmacotherapeutics and toxic effects, dosage calculations, and challenges related to drug therapy, provide the foundation from which drug therapy associated with specific body systems can be addressed. Discussion of the major drug groups focuses on therapeutic actions and indications, mechanism of action, pharmacokinetics, contraindications and precautions, adverse effects, clinically important drug-drug interactions and nursing implications which emphasize the nursing process and focus on patient care and education. Prototypes of the major drug groups are emphasized. Lifespan considerations, evidence for best practice, patient safety, and critical thinking are integrated throughout the course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: CHEM 0910 and NUR 0013 and (NUR 0031 or ORBIOL 0031)

NUR 0088 - INTRODUCTION TO BASIC STATISTICS FOR EVIDENCE-BASED PRACTICE

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to descriptive statistics and parametric and nonparametric statistical tests that are commonly used by researchers in the health sciences and appear in published research reports. Emphasis is placed on student mastery of concepts and principles that are fundamental to descriptive and inferential statistics, as well as interpretation and critical appraisal of their use in research studies. Opportunities are provided to manipulate data, perform basic statistical tests, and summarize findings in tabular, graphical, and narrative form.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Nursing students only.

NUR 0090 - FOUNDATIONS OF NURSING PRACTICE 1 CLINICAL

Minimum Credits: 1
Maximum Credits: 1
This course is designed to provide clinical experiences related to the theory provided in Foundations of Nursing Practice 1. Techniques used in the assessment of the physical, psychological and development dimensions of the individual within an acute care setting are demonstrated. Variations of findings based on influences such as age and culture are identified. Emphasis is placed on the therapeutic interventions of safety, hygiene and comfort, health assessment and health promotion.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 0080; PLAN: Nursing (BSN)

NUR 0092 - NURSING MANAGEMENT OF ADULT WITH ACUTE/CHRONIC HEALTH PROBLEMS CLINICAL

Minimum Credits: 4
Maximum Credits: 4
This course focuses on the nursing care of adults, including older adults, with acute and/or chronic illnesses. Students will be guided in critical thinking exercises and the use of therapeutic interventions and research findings in the management of adults with acute and/or chronic illnesses. During clinic, students will have the opportunity to practice clinical skills learned in the lab. Nursing process, critical thinking, and decision-making serve as the framework for acquisition of clinical psychomotor skills. Common concepts of care will be emphasized, including societal and cultural influences.
NUR 1020 - ADVANCED NURSING MANAGEMENT OF THE ADULT WITH ACUTE/COMPLEX HEALTH PROBLEMS CLINICAL

Minimum Credits: 2
Maximum Credits: 2
This clinical course focuses on the nursing care of adults with acute and complex illnesses in a hospital setting. Emphasis is placed on using the nursing process to assist students with the development of priority nursing goals and in applying critical thinking skills to patient care. The clinical nursing responsibilities include interpretation of diagnostic studies, medical/surgical patient management, evaluation of outcomes, health promotion, and support for individuals and families experiencing acute and complex health problems. This course includes application of cultural diversity awareness training to the nursing process. Clinical learning is focused on developing and refining the knowledge and skills to manage patient care as part of inter-professional teams. Clinical experiences are offered in acute care, critical care, and monitored units.

NUR 1021 - ADVANCED CLINICAL PROBLEM SOLVING

Minimum Credits: 5
Maximum Credits: 5
This course focuses on the nursing management of the adult who experiences an acute or complex illness with an alteration in multiple body systems. The students' ability to apply the nursing process, using critical thinking skills, is expanded through classroom and clinical activities. Professional competence is enhanced through the utilization of high fidelity human simulation technology. Collaboration with interdisciplinary health professionals in health promotion and restoration is fostered.

NUR 1021C - ADVANCED CLINICAL PROBLEM SOLVING CLINICAL

Minimum Credits: 2
Maximum Credits: 2
This course focuses on the management of the adult who experiences an acute or complex illness with an alteration in multiple body systems. The students' ability to apply the nursing process, using critical thinking skills, is expanded through clinical activities. Collaboration with interdisciplinary health professionals in health promotion and restoration is fostered.

NUR 1042 - NURSING CARE OF CHILDREN AND THEIR FAMILIES CLINICAL

Minimum Credits: 2
Maximum Credits: 2
This course focuses on nursing practice for restoration and maintenance of health in children in various stages of development within their families and the broader social contexts in which children grow and develop. Nursing approaches used in the clinical setting are based on the use of best evidence, developmental perspectives, and cultural competence. The nursing process is applied to the child and family to minimize the effects of stressors which have resulted in a disruption of health. There is an emphasis on critical thinking and decision making as the student applies theory to nursing care.
NUR 1050 - NURSING CARE OF MOTHERS, NEWBORNS AND FAMILIES

Minimum Credits: 2
Maximum Credits: 2
This course provides an introduction to the process of childbirth and the dynamics of the childbearing family. It explores the areas of health promotion, physiologic changes associated with pregnancy, high risk conditions associated with pregnancy and the development of the fetus and newborn. Emphasis is on adaptation to the biopsychosocial needs of the childbearing family with sensitivity to the cultural needs and ethical issues of a diverse population. Critical thinking, problem solving, stress adaptation, role, family and nursing theories provide a major focus for understanding childbearing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 0066 and 0082 and NUR 0087

NUR 1050C - NURSING CARE OF MOTHERS, NEWBORNS AND FAMILIES CLINICAL

Minimum Credits: 2.5
Maximum Credits: 2.5
This course provides an introduction to the process of childbirth and the dynamics of the childbearing family. It explores the areas of health promotion, physiologic changes associated with pregnancy, high risk conditions associated with pregnancy and the development of the fetus and newborn. Emphasis is on adaptation to the biopsychosocial needs of the childbearing family with sensitivity to the cultural needs and ethical issues of a diverse population. Critical thinking, problem solving, stress adaptation, role, family and nursing theories provide a major focus for understanding childbearing. Clinical experiences reflect a diversity of settings including outpatient, inpatient, and community programs that provide services to the childbearing family.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1050

NUR 1052 - NURSING CARE OF CHILDREN AND THEIR FAMILIES

Minimum Credits: 2
Maximum Credits: 2
This course focuses on the unique health and developmental needs of infants, children and adolescents with an emphasis on family-centered care. The course incorporates principles of assessment, planning and implementation of nursing interventions appropriate for health promotion, wellness, health restoration and various complex health problems. Nursing approaches are based on the use of best evidence, developmental perspectives, and cultural competence with a focus on critical thinking.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 0066 and 0082 and 0087

NUR 1052C - NURSING CARE OF CHILDREN AND THEIR FAMILIES CLINICAL

Minimum Credits: 2
Maximum Credits: 2
This course focuses on nursing practice for restoration and maintenance of health in children in various stages of development within their families and the broader social contexts in which children grow and develop. Nursing approaches used in the clinical setting are based on the use of best evidence, developmental perspectives, and cultural competence. The nursing process is applied to the child and family to minimize the effects of
stressors which have resulted in a disruption of health. There is an emphasis on critical thinking and decision making as the student applies theory to nursing care.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1052

NUR 1054 - NURSING CARE OF OLDER ADULTS

Minimum Credits: 2
Maximum Credits: 2
This course is designed to ensure competency in providing evidence-based nursing care to older adults and their families, across a continuum of health care settings. Attention is given to the complex interaction of acute and chronic co-morbid conditions, interdisciplinary collaboration, the recognition of risk factors, valid and reliable health assessment, and individualized and evidence-based care for older adults across a continuum of health care settings. The influence of attitudes, age, gender, race, culture, religion, language, lifestyle, technology, and health care policy on the biological, psychological, and social functioning of older adults is considered.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/ SU3 Elective Basis
Course Requirements: PREQ: NUR 0082; PROG: School of Nursing

NUR 1054C - NURSING CARE OF OLDER ADULTS CLINICAL

Minimum Credits: 1
Maximum Credits: 1
This course is designed to ensure competency in providing evidence-based nursing care to older adults and their families, across a continuum of health care settings. Attention is given to the complex interaction of acute and chronic co-morbid conditions, interdisciplinary collaboration, the recognition of risk factors, valid and reliable health assessment, and individualized care for older adults across a continuum of health care settings. The influence of attitudes, age, gender, race, culture, religion, language, lifestyle, technology, and health care policy on the biological, psychological, and social functioning of older adults is considered.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1054

NUR 1057 - NURSING CARE OF MOTHERS, NEWBORNS AND FAMILIES CLINICAL

Minimum Credits: 2
Maximum Credits: 2
This course provides an introduction to the process of childbirth and the dynamics of the childbearing family. It explores the areas of health promotion, physiologic changes associated with pregnancy, high risk conditions associated with pregnancy and the development of the fetus and newborn. Emphasis is on adaptation to the biopsychosocial needs of the childbearing family with sensitivity to the cultural needs and ethical issues of a diverse population. Critical thinking, problem solving, stress adaptation, role, family and nursing theories provide a major focus for understanding childbearing. Clinical experiences reflect a diversity of settings including outpatient, inpatient, and community programs that provide services to the childbearing family.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1050; PLAN: Nursing (BSN)

NUR 1060 - NURSING CARE OF CLIENTS WITH PSYCHIATRIC MENTAL HEALTH PROBLEMS

Minimum Credits: 2
Maximum Credits: 2
This course is designed to teach basic psychiatric mental health nursing concepts and their application to clinical practice. Classroom learning is focused on developmental, psychological, and biological theories in order to enhance understanding of psychiatric illness. Major psychiatric illnesses throughout the lifespan as well as contemporary methods of treatment are addressed. Emphasis is placed on understanding the unique contributions of social and cultural factors to mental health.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: NUR 0066 and NUR 0082 and NUR 0087; CREQ: NUR 1120

**NUR 1060C - NURSING CARE OF CLIENTS WITH PSYCHIATRIC MENTAL HEALTH PROBLEMS**  
**CLINICAL**

- **Minimum Credits:** 2  
- **Maximum Credits:** 2  
This course focuses on nursing practice of health promotion and restoration in individuals with mental health problems. Application of theoretical concepts and nursing interventions is the focus of the clinical experience in acute, chronic, and community mental health settings. Emphasis is placed on understanding the unique contributions of social and cultural factors in the development of treatment plans for clients experiencing psychiatric problems.  
**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** H/S/U Basis  
**Course Requirements:** CREQ: NUR 1060

**NUR 1061 - INDEPENDENT STUDY**

- **Minimum Credits:** 1  
- **Maximum Credits:** 3  
An independent study is a student-initiated experience planned to permit students to pursue an area of interest in nursing with guidance of a faculty preceptor.  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SU3 Elective Basis

**NUR 1066 - NURSING CARE OF CLIENTS WITH PSYCHIATRIC MENTAL HEALTH PROBLEMS**  
**CLINICAL**

- **Minimum Credits:** 2  
- **Maximum Credits:** 2  
This course focuses on nursing practice of health promotion and restoration in individuals with mental health problems. Application of theoretical concepts and nursing interventions is the focus of the clinical experience in acute, chronic, and community mental health settings. Emphasis is placed on understanding the unique contributions of social and cultural factors in the development of treatment plans for clients experiencing psychiatric problems.  
**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** H/S/U Basis

**NUR 1074 - PROFESSIONAL DEVELOPMENT AND PRACTICUM 1**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course enables the registered nurse student to further develop critical thinking, leadership abilities, communication and decision-making skills in the development and implementation of an evidence-based clinical capstone project to enhance patient care quality. A systematic approach is used to identify a clinical topic for evidence-based literature review, presentation, and evaluation. Each student identifies specific learning activities for the practicum, which relate directly to a selected culturally diverse environment. Under the guidance of faculty and a clinical preceptor, didactic
seminars, assignments, and mentored clinical practicum are used to foster independence and self-direction for all students.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: NUR 0067 or 2000 or 2001

### NUR 1077 - SCHOOL NURSE SEMINAR

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is designed to prepare the professional nurse for certification as a school nurse in Pennsylvania; both the theory component (NUR 1077) and the practicum (NUR 1078) are required for eligibility. The role of the school nurse is explored through the historical, legal, ethical, research and practice perspectives. The biological, physical, developmental, behavioral, cultural and psychosocial needs of children of all ages in the school setting are examined. Throughout the course, current evidence related to school nursing and Pennsylvania educational requirements is applied to the health needs of school age children, including those with special health and learning needs, the culturally diverse and English language learners (ELL's). The independent and collaborative aspects of the school nurse role are explored.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: NUR 1078; PROG: School of Nursing

### NUR 1077D - SCHOOL NURSE SEMINAR

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is designed to prepare the professional nurse for certification as a school nurse in Pennsylvania. The role of the school nurse is explored through the historical, legal, ethical, research and practice perspectives. The biological, physical, developmental, behavioral, cultural and psychosocial needs of children of all ages in the school setting are examined. Throughout the course, current evidence related to school nursing and Pennsylvania educational requirements is applied to the health needs of school age children, including those with special health and learning needs, the culturally diverse and English language learners (ELL's). The independent and collaborative aspects of the school nurse role are explored.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: NUR 1078

### NUR 1078 - SCHOOL NURSE PRACTICUM

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is designed to prepare the professional nurse for certification as a school nurse in Pennsylvania; both the theory component (NUR 1077) and this practicum (NUR 1078) are required for eligibility. This course provides the required 100 hours of clinical practicum experience in elementary, middle and high school settings. The nursing care of children requiring acute, chronic and episodic care is performed under the guidance of an experienced school nurse. Throughout the course, the application of the nursing process and evidence-based approaches are employed when providing nursing services to school age children. Interdisciplinary care and management for school age children with special health and learning needs, including the culturally diverse and English language learners (ELL's) is emphasized. The independent and collaborative aspects of the school nurse role are explored within the school setting.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: NUR 1077; PROG: School of Nursing

### NUR 1079 - PROFESSIONAL DEVELOPMENT AND PRACTICUM 2
Minimum Credits: 3
Maximum Credits: 3
This course enables the registered nurse student to further develop oral and written communication, critical thinking, and leadership skills through the presentation, implementation, and evaluation of an evidence-based clinical practice process during the clinical practicum. Under the guidance of faculty and a clinical preceptor, didactic seminars, assignments, and mentored clinical practicum are used to foster leadership skills, independence and self-direction with a clinical project for all students.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 1074; PROG: School of Nursing

NUR 1084 - ADVANCED CARE OF THE ADULT 2

Minimum Credits: 4
Maximum Credits: 4
This course is a continuation of NUR 1082 and includes nursing care of adults experiencing acute/complex alterations in multiple body systems. Practice settings include acute/critical care units. Emphasis on prioritization of nursing care, technology/bioinstrumentation, patient and family role adaptation and multiple body system alterations. Roy's adaptation model and Watson's theory serve as base. Pathophysiology, diagnostic studies, associated nursing responsibilities and medical-surgical management are included.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Nursing students only.

NUR 1085 - ETHICS IN NURSING AND HEALTH CARE

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the domain of clinical ethics as a foundation for developing ethical expertise in nursing practice. The course focuses on contemporary nursing and health care issues that raise personal and professional ethical concerns. Emphasis is placed on cultural differences, current legislation, political and religious controversy, economic constraints, and professional commitment related to the resolution of the identified ethical dilemmas. The process of ethical analysis and reasoning is used to resolve representative patient and health care situations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 0082

NUR 1087 - TRANSITION INTO PRACTICE

Minimum Credits: 5
Maximum Credits: 5
This course focuses on facilitating the transition to professional practice through the use of agency preceptors to increase independence and responsibility for patient care in an intensive clinical experience. Leadership principles are utilized in the management of small groups of clients and unit personnel. Progressive acquisition of skills in clinic decision-making will be emphasized.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: H/S/U Basis
Course Requirements: School of Nursing students only.

NUR 1095 - COMMUNITY CONNECTOR COURSE

Minimum Credits: 2
Maximum Credits: 2
This course is especially well-suited for students from SHRS, PHARM, NUR and School of Social Work. This seminar focuses on the patient
population which is a high risk population who are vulnerable to frequent readmissions to the hospital. Emphasis will be placed on: 1) understanding this patient population, the health system and health behavior challenges associated with this population, and systematic needs associated with reducing their health care needs 2) The course will include presentations by researchers, clinicians, and healthcare industry experts. Students will need to be available for approximately 6, out-of-classroom activities during the semester. This course will expose students to the patient population through visits with clinicians at the hospital, home, and community, including in-home assessments, patient education sessions, and behavior change (motivational interviewing) techniques. Students may be paired with a nurse, speech language pathologist, occupational therapist, or physical therapist during one of these activities. Each out-of-classroom visit often requires a 4-hour block of time.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade

**NUR 1120 - ADVANCED NURSING MANAGEMENT ADULT ACUTE/COMPLEX HEALTH PROBLEMS**

**Minimum Credits:** 2  
**Maximum Credits:** 2  
This course focuses on the patient centered nursing care of adults experiencing acute and complex illnesses. Emphasis is placed on the prioritization and decision making processes of nursing care and the nursing responsibilities associated with translating, integrating and applying medical/surgical management, evaluation of outcomes, health promotion, and support for individuals and families experiencing acute and complex health problems. This course will also discuss the increasing diversity of this nation's population as expressed through age, racial, ethnic, gender, cultural, spiritual and sexual orientation. Discussions will occur with the effect of socio-economic differences and how it may affect the patient's overall health care. Discussion of interdisciplinary collaboration healthcare professional is emphasized.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: NUR 0066 and NUR 0067 and NUR 0082 and NUR 0087

**NUR 1120C - ADVANCED NURSING MANAGEMENT OF THE ADULT WITH ACUTE/COMPLEX HEALTH PROBLEMS CLINICAL**

**Minimum Credits:** 2.5  
**Maximum Credits:** 2.5  
This clinical course focuses on the nursing care of adults with acute and complex illnesses in a hospital setting. Emphasis is placed on using the nursing process to assist students with the development of priority nursing goals and in applying critical thinking skills to patient care. The clinical nursing responsibilities include interpretation of diagnostic studies, medical/surgical patient management, evaluation of outcomes, health promotion, and support for individuals and families experiencing acute and complex health problems. This course includes application of cultural diversity awareness training to the nursing process. Clinical learning is focused on developing and refining the knowledge and skills to manage patient care as part of inter-professional teams. Clinical experiences are offered in acute care, critical care, and monitored units.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** H/S/U Basis  
**Course Requirements:** CREQ: NUR 1120

**NUR 1121 - ADVANCED CLINICAL PROBLEM SOLVING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course focuses on the nursing management of the adult who experiences an acute or complex illness with an alteration in multiple body systems. The students' ability to apply the nursing process, using critical thinking skills, is expanded through classroom and case study activities. Professional competence is enhanced through the utilization of high fidelity human simulation technology.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis  
**Course Requirements:** PREQ: NUR 1052 and 1054 and 1060; PROG: School of Nursing

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NUR 1121C - ADVANCED CLINICAL PROBLEM SOLVING CLINICAL

Minimum Credits: 2
Maximum Credits: 2
This course focuses on the nursing management of the adult who experiences an acute or complex illness with an alteration in multiple body systems. The students' ability to apply the nursing process, using critical thinking skills, is expanded through clinical activities. Collaboration with interdisciplinary health professionals in health promotion and restoration is fostered.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1121

NUR 1127 - COMMUNITY HEALTH NURSING

Minimum Credits: 3
Maximum Credits: 3
This course will provide the student with a broad introduction to community health and the role of nursing within this context. Students will explore epidemiology; health promotion and disease prevention within groups; individual and family case management; community assessment and intervention; environmental hazards; and factors influencing the delivery of and access to community health services. The health care needs of selected at-risk populations will be examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: NUR 0067; PROG: School of Nursing

NUR 1127C - COMMUNITY HEALTH NURSING CLINICAL

Minimum Credits: 0
Maximum Credits: 0
The overall objective of this course is to provide the student with a broad introduction to community health and the role of nursing within this context. Students will experience independence and collaboration with community-based clinicians in a variety of settings. Students will have opportunities to apply epidemiology; health promotion and disease prevention within groups; individual and family case management; community assessment and intervention; environmental hazards; and factors influencing the delivery of and access to community health services at the individual, family, and aggregate levels.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1128

NUR 1128 - COMMUNITY HEALTH NURSING

Minimum Credits: 2
Maximum Credits: 2
The overall objective of this course is to provide the student with a broad introduction to community health and the role of nursing within this context. Students will explore epidemiology; health promotion and disease prevention within groups; individual and family case management; community assessment and intervention; environmental hazards; and factors influencing the delivery of and access to community health services. The health care needs of selected at-risk populations will be examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (NUR 1120 or 1220) and (NUR 1050 or 1250) and (NUR 1060 or 1260) and (NUR 1052 or 1252)

NUR 1128C - COMMUNITY HEALTH NURSING CLINICAL
Minimum Credits: 2
Maximum Credits: 2
The overall objective of this course is to provide the student with a broad introduction to community health and the role of nursing within this context. Students will experience independence and collaboration with community-based clinicians in a variety of settings. Students will have opportunities to apply epidemiology; health promotion and disease prevention within groups; individual and family case management; community assessment and intervention; environmental hazards; and factors influencing the delivery of and access to community health services at the individual, family, and aggregate levels.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1128

NUR 1131 - INTERPROFESSIONAL HEALTHCARE TEAMS

Minimum Credits: 1
Maximum Credits: 2
This course provides a review of interprofessional healthcare teams, barriers and facilitators, roles/responsibilities of various members of the healthcare team, and strategies that help to incorporate teams within a variety of healthcare settings. The student is guided through methods of team development in healthcare organizations. The course provides a basis for incorporating nursing as an integral member of the healthcare team.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: School of Nursing students only.

NUR 1134 - TRANSITION INTO PROFESSIONAL NURSING PRACTICE

Minimum Credits: 2
Maximum Credits: 2
Students synthesize knowledge about the professional nursing roles and increase their understanding of their responsibility and accountability for the nursing care of individuals, families and aggregates. Theory related to professional nursing roles, patient care management, and leadership is presented. In addition, health care policy related to specific nursing issues is examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: (NUR 1120 or 1220) and (NUR 1050 or 1250) and (NUR 1060 or 1260) and (NUR 1052 or 1252)

NUR 1134C - TRANSITION INTO PROFESSIONAL NURSING PRACTICE CLINICAL

Minimum Credits: 6
Maximum Credits: 6
This course is designed to facilitate the transition into professional practice through preceptorship with registered nurses in a variety of settings. Students synthesize knowledge about the professional nursing roles and increase their responsibility and accountability for the nursing care of individuals, families and aggregates. Theory related to professional nursing roles, patient care management, and leadership is presented. In addition, health care policy related to specific nursing issues is examined.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1134

NUR 1135 - TRANSITION INTO PROFESSIONAL NURSING PRACTICE CLINICAL

Minimum Credits: 4
Maximum Credits: 4
This course is designed to facilitate the transition into professional practice through preceptorship with registered nurses in a variety of settings.
Students synthesize knowledge about the professional nursing roles and increase their responsibility and accountability for the nursing care of individuals, families and aggregates. Theory related to professional nursing roles, patient care management, and leadership is presented. In addition, health care policy related to specific nursing issues is examined.

Academic Career: Undergraduate  
Course Component: Clinical  
Grade Component: H/S/U Basis  
Course Requirements: CREQ: NUR 1134; PLAN: BSN

NUR 1138 - COMMUNITY HEALTH NURSING CLINICAL

Minimum Credits: 2  
Maximum Credits: 2  
The overall objective of this course is to provide the student with a broad introduction to community health and the role of nursing within this context. Students will experience independence and collaboration with community-based clinicians in a variety of settings. Students will have opportunities to apply epidemiology; health promotion and disease prevention within groups; individual and family case management; community assessment and intervention; environmental hazards; and factors influencing the delivery of and access to community health services at the individual, family, and aggregate levels.

Academic Career: Undergraduate  
Course Component: Clinical  
Grade Component: H/S/U Basis  
Course Requirements: CREQ: NUR 1128; PLAN: BSN

NUR 1140 - COMPARATIVE HEALTH ISSUES: TRENDS WITHIN HEALTH CARE SYSTEMS (GLOBAL SEMINAR IN BUENOS AIRES)

Minimum Credits: 3  
Maximum Credits: 3  
The course will discuss conflicts between economic and clinical priorities, associated health disparities and the variability in services and outcomes. It will also provide students with a broad perspective on the different health care systems in the hemisphere. In doing so, it will focus on public health services, primary care (networks and levels of health care, prevention, risk assessment, etc.), secondary care (the hospital as an institution, levels of complexity, acute and chronic pathology treatment, etc.) An up-to-date picture of population health will be introduced. The objectives and organization of health care systems will be studied. Special attention will be paid to international variations as illustrated by a comparison between Argentina and the United States. The students will have the opportunity to visit public and private health institutions, to observe public health activities and to meet with health professionals. Two brief reports of each visit will be required and evaluated. The seminar will integrate experiential educational activities with formal classroom study and will demonstrate the trans-disciplinary nature of public health studies. The seminar analyzes health care system issues and trends from a historical, political and social perspective.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PLAN: Nursing

NUR 1141 - HEALTH DISPARITIES IN VULNERABLE POPULATIONS AND ETHNIC CULTURAL GROUPS

Minimum Credits: 2  
Maximum Credits: 2  
The primary focus of this course is to explore a set of major health disparities affecting diverse racial and ethnic groups (Black or African American, Asian American, Native American, Hispanic or Latinos, American Indian or Alaska Natives and White) living in urban, suburban, and rural settings. Students will learn about the specific health conditions affecting each group, social justice and environmental justice issues affecting their health, and stress-related issues whether it be military, community violence or community environmental issues locally or in the state. The course is designed for undergraduate juniors and seniors and honor students.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Nursing (BSN)
NUR 1142 - PROFESSIONAL ISSUES IN ADVANCED PRACTICE NURSING: NURSE ANESTHESIA

Minimum Credits: 2
Maximum Credits: 2
This course is designed to provide the undergraduate nursing student with an understanding of the role of the nurse anesthetist as an advanced practice nurse. Emphasis will be placed on exploring 1) the advanced practice role as a nurse anesthetist, 2) health care policies affecting nurse anesthesia practice, and 3) evidence based practice in nurse anesthesia practice. Students will describe the opportunities and barriers for nurse anesthetists in a variety of practice settings. Students will also explore the implications of health care policies at the national, state and local level on practice.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 1120; PROG: Nursing; GPA: 3.5

NUR 1143 - FOUNDATIONS OF PERSONALIZED HEALTH: TRANSLATION FROM BASIC RESEARCH TO CLINICAL PRACTICE

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

NUR 1150 - NURSING IN NICARAGUA: PUBLIC AND COMMUNITY HEALTH

Minimum Credits: 3
Maximum Credits: 3
Students broaden their global health perspective in this two-week immersion program by learning first-hand how a developing country's approach to public and community health compares to that of the United States. Students visit the Nicaraguan World Health Organization office, Ministry of Health, UPOLI University, rural and urban community health centers, and attend local cultural events. In addition, students partner with local nursing students to observe family assessments in the home, plan a health promotion event for community members, and have opportunities to give back through service.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 0082 and NUR 0082C or 1282C

NUR 1154 - NURSING CARE OF OLDER ADULTS

Minimum Credits: 2
Maximum Credits: 2
This course is designed to ensure competency in providing evidence-based nursing care to older adults and their families, across a continuum of health care settings. Attention is given to the complex interaction of acute and chronic co-morbid conditions, interdisciplinary collaboration, the recognition of risk factors, valid and reliable health assessments, and individualized care for older adults in acute and skilled nursing facilities. The influence of attitudes, age, gender, race, culture, religion, language, lifestyle, technology, and health care policy on the biological, psychological, and social functioning of older adults is considered.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

NUR 1220 - ADVANCED NURSING MANAGEMENT OF THE ADULT WITH ACUTE/COMPLEX PROBLEMS CLINICAL
Minimum Credits: 5
Maximum Credits: 5
This course focuses on the nursing care of adults experiencing acute/complex illnesses. Emphasis is placed on the prioritization and decision making processes of nursing care and nursing responsibilities associated with diagnostic studies, m/s management, evaluation of outcomes, health promotion, and support for individuals/families experiencing acute and complex health problems. Collaboration with interdisciplinary health professionals in health restoration is fostered. Clinical experiences are offered in acute, critical care, and monitored units.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: NUR 1282; PROG: School of Nursing

NUR 1220C - ADVANCED NURSING MANAGEMENT OF THE ADULT WITH ACUTE/COMPLEX HEALTH PROBLEMS CLINICAL

Minimum Credits: 2
Maximum Credits: 2
This clinical course focuses on the nursing care of adults with acute and complex illnesses in a hospital setting. Emphasis is placed on using the nursing process to assist students with the development of priority nursing goals and in applying critical thinking skills to patient care. The clinical nursing responsibilities include interpretation of diagnostic studies, medical/surgical patient management, evaluation of outcomes, health promotion, and support for individuals and families experiencing acute and complex health problems. This course includes application of cultural diversity awareness training to the nursing process. Clinical learning is focused on developing and refining the knowledge and skills to manage patient care as part of inter-professional teams. Clinical experiences are offered in acute care, critical care, and monitored units.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1120

NUR 1221 - ADVANCED CLINICAL PROBLEM SOLVING

Minimum Credits: 4
Maximum Credits: 4
This course focuses on the nursing management of the adult who experiences an acute or complex illness with an alteration in multiple body systems. The students' ability to apply the nursing process using critical thinking skills is expanded through classroom and clinical activities. Professional competence is enhanced through utilization of high fidelity human simulation technology. Collaboration with interdisciplinary health professionals in health promotion and restoration is fostered.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: NUR 1254 and 1282; PROG: School of Nursing

NUR 1221C - ADVANCED CLINICAL PROBLEM SOLVING CLINICAL

Minimum Credits: 1
Maximum Credits: 1
This course focuses on the nursing management of the adult who experiences an acute or complex illness with an alteration in multiple body systems. The students' ability to apply the nursing process, using critical thinking skills, is expanded through clinical activities. Collaboration with interdisciplinary health professionals in health promotion and restoration is fostered.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1121

NUR 1227 - COMMUNITY HEALTH NURSING
Minimum Credits: 3
Maximum Credits: 3
The overall objective of this course is to provide the student with a broad introduction to community health and the role of nursing within this context. Students will explore epidemiology; health promotion and disease prevention within groups; individual and family case management; community assessment and intervention; environmental hazards; and factors influencing the delivery of and access to community health services. The health care needs of selected at-risk populations will be examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 2000; PROG: School of Nursing

NUR 1228C - COMMUNITY HEALTH NURSING CLINICAL

Minimum Credits: 0
Maximum Credits: 0
The overall objective of this course is to provide the student with a broad introduction to community health and the role of nursing within this context. Students will experience independence and collaboration with community-based clinicians in a variety of settings. Students will have opportunities to apply epidemiology; health promotion and disease prevention within groups; individual and family case management; community assessment and intervention; environmental hazards; and factors influencing the delivery of and access to community health services at the individual, family, and aggregate levels.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1128

NUR 1233 - TRANSITION INTO PROFESSIONAL NURSING PRACTICE

Minimum Credits: 5
Maximum Credits: 5
This course is designed to facilitate the transition into professional practice through the preceptorship with registered nurses in a variety of settings. Students synthesize knowledge about the professional nursing roles and increase their responsibility and accountability for nursing practice for individuals, families and aggregates. Theory related to professional nursing roles, patient care management, and leadership is presented. In addition, health care policy related to specific nursing issues is examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: NUR 1254 and 1282; PROG: School of Nursing

NUR 1234C - TRANSITION INTO PROFESSIONAL NURSING PRACTICE CLINICAL

Minimum Credits: 3
Maximum Credits: 3
This course is designed to facilitate the transition into professional practice through the preceptorship with registered nurses in a variety of settings. Students synthesize knowledge about the professional nursing roles and increase their responsibility and accountability for the nursing care of individuals, families and aggregates.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1134

NUR 1250 - NURSING CARE OF MOTHERS, NEWBORNS AND FAMILIES

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to the process of childbirth and the dynamics of the childbearing family. It explores the areas of health promotion, physiologic changes associated with pregnancy, high risk conditions associated with pregnancy and the development of the fetus and newborn. Emphasis is on adaptation to the biopsychosocial needs of the childbearing family with sensitivity to the cultural needs and ethical issues of a diverse population. Critical thinking, problem solving, stress adaptation, role, family and nursing theories provide a major focus for understanding childbearing. Clinical experiences reflect a diversity of settings including outpatient, inpatient, and community programs that provide services to the childbearing family.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: NUR 1282; PROG: School of Nursing

**NUR 1250C - NURSING CARE OF MOTHERS, NEWBORNS AND FAMILIES CLINICAL**

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
This course provides an introduction to the process of childbirth and the dynamics of the childbearing family. It explores the areas of health promotion, physiologic changes associated with pregnancy, high risk conditions associated with pregnancy and the development of the fetus and newborn. Emphasis is on adaptation to the biopsychosocial needs of the childbearing family with sensitivity to the cultural needs and ethical issues of a diverse population. Critical thinking, problem solving, stress adaptation, role, family and nursing theories provide a major focus for understanding childbearing. Clinical experiences reflect a diversity of settings including outpatient, inpatient, and community programs that provide services to the childbearing family.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** H/S/U Basis  
**Course Requirements:** CREQ: NUR 1050

**NUR 1252 - NURSING CARE OF CHILDREN AND THEIR FAMILIES**

- **Minimum Credits:** 4  
- **Maximum Credits:** 4  
This course focuses upon nursing practice for restoration and maintenance of health in children in various stages of development within the family. Nursing approaches are based on the use of developmental theories and cultural sensitivity. The nursing process is applied to the child and family to minimize the effects of stressors which have resulted in a disruption of health. There will be a focus on critical thinking and decision making as the student applies theory to nursing care.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: NUR 1282; PROG: School of Nursing

**NUR 1252C - NURSING CARE OF CHILDREN AND THEIR FAMILIES CLINICAL**

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
This course focuses on nursing practice for restoration and maintenance of health in children in various stages of development within their families and the broader social contexts in which children grow and develop. Nursing approaches used in the clinical setting are based on the use of best evidence, developmental perspectives, and cultural competence. The nursing process is applied to the child and family to minimize the effects of stressors which have resulted in a disruption of health. There is an emphasis on critical thinking and decision making as the student applies theory to nursing care.

**Academic Career:** Undergraduate  
**Course Component:** Clinical  
**Grade Component:** H/S/U Basis  
**Course Requirements:** CREQ: NUR 1052

**NUR 1254 - NURSING CARE OF OLDER ADULTS**
This course is designed to ensure competency in providing evidence-based nursing care to older adults and their families, across a continuum of health care settings. Attention is given to the complex interaction of acute and chronic co-morbid conditions, interdisciplinary collaboration, the recognition of risk factors, valid and reliable health assessments, and individualized care for older adults in acute and skilled nursing facilities. The influence of attitudes, age, gender, race, culture, religion, language, lifestyle, technology, and health care policy on the biological, psychological, and social functioning of older adults is considered.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SU3 Elective Basis
**Course Requirements:** PREQ: NUR 0082 or 1282; PROG: School of Nursing

### NUR 1260 - NURSING CARE OF CLIENTS WITH PSYCHIATRIC MENTAL HEALTH PROBLEMS

This course is designed to teach basic psychiatric mental health nursing concepts and their application to clinical practice. Classroom learning is focused on developmental, psychological, and biological theories in order to enhance understanding of psychiatric illness. Major psychiatric illnesses throughout the lifespan as well as contemporary methods of treatment are addressed. Application of theoretical concepts and nursing interventions is the focus of the clinical experience in acute, chronic, and community mental health settings. Emphasis is placed on understanding the unique contributions of social and cultural factors in the development of treatment plans for clients experiencing psychiatric problems.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PREQ: NUR 1282; CREQ: NUR 1220; PROG: School of Nursing

### NUR 1260C - NURSING CARE OF CLIENTS WITH PSYCHIATRIC MENTAL HEALTH PROBLEMS CLINICAL

This course focuses on nursing practice of health promotion and restoration in individuals with mental health problems. Application of theoretical concepts and nursing interventions is the focus of the clinical experience in acute, chronic, and community mental health settings. Emphasis is placed on understanding the unique contributions of social and cultural factors in the development of treatment plans for clients experiencing psychiatric problems.

**Academic Career:** Undergraduate
**Course Component:** Clinical
**Grade Component:** H/S/U Basis
**Course Requirements:** CREQ: NUR 1060

### NUR 1281 - FOUNDATIONS OF NURSING PRACTICE 1

This course focuses on theory acquisition and skills application in communication, therapeutic intervention, and clinical reasoning. Techniques of assessment, analysis, intervention, and planning of the physical, psychological, and developmental dimensions of the individual are explored through a variety of learning strategies. Variations of expected findings based on influences such as age, social condition, and culture are discussed. Emphasis is placed on the therapeutic interventions of safety, hygiene, comfort, health promotion, and safe performance of psychomotor skills.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis
**Course Requirements:** CREQ: NUR 0082 and NUR 1282C

### NUR 1282 - NURSING MANAGEMENT OF THE ADULT WITH ACUTE/CHRONIC HEALTH PROBLEMS

2049
Minimum Credits: 6
Maximum Credits: 6
This course focuses on the nursing care of hospitalized adults with acute and/or chronic illnesses. Students will be guided in critical thinking exercises and the use of therapeutic interventions and research findings in the management of hospitalized adults. During laboratory sessions, students will have the opportunity to practice simulated clinical skills. Nursing process, critical thinking, and decision-making serve as the framework for acquisition of clinical psychomotor skills. Students will have clinical experiences with in-patients who require medical and/or surgical treatments and who are not experiencing a complicated illness course. Common concepts of care and common problems encountered in the care of ill adults and elderly clients will be emphasized, including societal and cultural influences.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: NUR 0066 and 0087 and 1281

NUR 1282C - NURSING MANAGEMENT OF ADULT WITH ACUTE/CHRONIC HEALTH PROBLEMS

Minimum Credits: 4
Maximum Credits: 4
This course focuses on the nursing care of adults, including older adults, with acute and/or chronic illnesses. Students will be guided in critical thinking exercises and the use of therapeutic interventions and research findings in the management of adults with acute and/or chronic illnesses. During clinic, students will have the opportunity to practice clinical skills learned in the lab. Nursing process, critical thinking, and decision-making serve as the framework for acquisition of clinical psychomotor skills. Common concepts of care will be emphasized, including societal and cultural influences.

Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 0082 and NUR 0087 and NUR 1281

NUR 1477 - SCHOOL NURSE SEMINAR

Minimum Credits: 3
Maximum Credits: 3
This course is designed to prepare the professional nurse for certification as a school nurse in Pennsylvania. The role of the school nurse is explored through the historical, legal, ethical, research and practice perspectives. The biological, physical, developmental, behavioral, cultural and psychosocial needs of children of all ages in the school setting are examined. Throughout the course, current evidence related to school nursing and Pennsylvania educational requirements is applied to the health needs of school age children, including those with special health and learning needs, the culturally diverse and English language learners (ELL's). The independent and collaborative aspects of the school nurse role are explored.

Academic Career: UGRD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: NUR 1078

NUR 1630 - HEALTH CARE DELIVERY IN THE UNITED KINGDOM

Minimum Credits: 2
Maximum Credits: 2
This course is designed to provide the undergraduate nursing student with exposure to the culture and health care delivery system in a foreign country. Emphasis will be placed on exploring health issues and risk factors, the impact of cultural characteristics on health care delivery and utilization, and the achievement of health-related goals in the united kingdom. Students will compare the health care systems, nursing education and nursing practice in the united kingdom and the united states.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: NUR 1060 and 1120 and 1900; PROG: School of Nursing
NUR 1631 - HEALTH CARE DELIVERY IN SWITZERLAND

Minimum Credits: 2  
Maximum Credits: 2  
This course is designed to provide the undergraduate nursing student with exposure to the culture and health care delivery system in a foreign country. Emphasis will be placed on exploring health issues and risk factors, the impact of cultural characteristics on health care delivery and utilization, and the achievement of health-related goals in Switzerland. Students will compare the health care systems, nursing education and nursing practice in Switzerland and the United States.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PREQ: NUR 1060 and 1120 and 1900; PROG: School of Nursing

NUR 1632 - HEALTH CARE DELIVERY IN ITALY

Minimum Credits: 2  
Maximum Credits: 2  
This course is designed to provide the undergraduate nursing student with exposure to the culture and health care delivery system in a foreign country. Emphasis will be placed on exploring health issues and risk factors, the impact of cultural characteristics on health care delivery and utilization, and the achievement of health-related goals in Italy. Students will compare the health care systems, nursing education and nursing practice in Italy and the United States. They will identify national and international health-related organizations in Italy and the mission of and roles these institutions play.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SU3 Elective Basis

NUR 1633 - HEALTH CARE DELIVERY IN CAMBODIA

Minimum Credits: 1  
Maximum Credits: 3  
This course is designed to provide the undergraduate nursing student with exposure to the culture and health care delivery system in a foreign country. Emphasis will be placed on exploring health issues and risk factors, the impact of cultural characteristics on health care delivery and utilization, and the achievement of health-related goals in Cambodia. Students will compare the health care systems, nursing education and nursing practice in Cambodia and the United States.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: H/S/U Basis  
Course Requirements: PREQ: NUR 1900; PROG: School of Nursing

NUR 1634 - HEALTH CARE DELIVERY IN OMAN

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to provide the undergraduate nursing student with exposure to the culture and health care delivery system in a foreign country. Emphasis will be placed on exploring health issues and risk factors, the impact of cultural characteristics on health care delivery and utilization, and the achievement of health-related goals in Oman. Students will compare the health care systems, nursing education and nursing practice in Oman and the United States.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: Letter Grade  
Course Requirements: PREQ: (NUR 1765) or (HRS 1017); CREQ: NUR 1829; PROG: School of Nursing

NUR 1636 - HEALTH CARE DELIVERY IN CHINA
Minimum Credits: 3
Maximum Credits: 3
This course is designed to provide the undergraduate nursing student with exposure to the culture and health care delivery system in a foreign country. Emphasis will be placed on exploring health issues and risk factors, the impact of cultural characteristics on health care delivery and utilization, and the achievement of health-related goals in China. Students will compare the health care systems, nursing education and nursing practice in China and the United States.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 1900

NUR 1637 - HEALTH CARE DELIVERY IN THAILAND

Minimum Credits: 1
Maximum Credits: 3
This course is designed to provide the undergraduate nursing student with exposure to the culture and health care delivery system in a foreign country. Emphasis will be placed on exploring health issues and risk factors, the impact of cultural characteristics on health care delivery and utilization, and the achievement of health-related goals in Thailand. Students will compare the health care systems, nursing education and nursing practice in Thailand and the United States.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: NUR 1900; PROG: School of Nursing

NUR 1640 - LEADERSHIP IN MILITARY NURSING

Minimum Credits: 3
Maximum Credits: 3
This elective course is designed to enhance nurse cadets' leadership ability and technical competence. This course has two components: leadership training and precepted clinical experience.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: H/S/U Basis
Course Requirements: School of Nursing students only.

NUR 1670 - IV THERAPY: PRINCIPLES & PRACTICE

Minimum Credits: 2
Maximum Credits: 2
Course focuses on principles involved in initiating and maintaining IV therapy and the variety of devices used to deliver IV meds. The preferred and recommended techniques to effectively insert IV devices will be reviewed and discussed. Anatomy and physiology of the circulatory system will be reviewed. Venipuncture techniques and equipment will be introduced and examined. Emphasis will be placed on specialty IV devices and the appropriateness of their use. Complications of IV therapy and specialty lines will also be addressed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: School of Nursing students only.

NUR 1680 - INTRODUCTION TO GENETICS AND MOLECULAR THERAPEUTICS

Minimum Credits: 3
Maximum Credits: 3
This is an introductory course that focuses on the fundamentals of genetics. The course is designed to give the student a basic understanding of genetic concepts so that this knowledge can be utilized to understand current and future genetic theories and therapeutics.
NUR 1710 - APPLIED ADULT CARDIOPULMONARY CRITICAL CARE

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to provide students with the opportunity to synthesize and apply concepts related to the cardiopulmonary assessment and multidisciplinary management of critically ill adults. Through the use of presentations and laboratory sessions, the student will explore the pathophysiologic basis of critical cardiopulmonary instability, physical and technologic assessment parameters, and treatment modalities commonly utilized in the care of these patients in the intensive care unit. Interactive laboratory demonstration of vasoactive drugs, arterial, central venous and pulmonary artery monitoring, artificial airways, mechanical ventilation and rhythm strip interpretation will be provided. Critical clinical decision making and nursing responsibilities specific to dysrhythmia interpretation are addressed, including institution of appropriate immediate nursing intervention, pharmacological, and electrical therapeutic interventions based on advanced cardiac life support (ACLS) algorithms. Further, students will have the opportunity to synthesize and apply this information within patient care scenarios of respiratory and cardiac instability.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: NUR 1120; PROG: School of Nursing

NUR 1750 - PRACTICAL ISSUES IN DISABILITY

Minimum Credits: 3
Maximum Credits: 3
Course discusses the issues involved in providing assistance to individuals with severe disabilities, and provides opportunities for learning practical skills for assisting these individuals in their activities of daily living.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Nursing students only

NUR 1765 - RISK FACTORS AND HEALTH

Minimum Credits: 3
Maximum Credits: 3
The overall objective of this course is to provide the student with a broad description of risk factors and health promotion for individuals, families and communities. Current federal, state and professional organization guidelines and recommendations for health promotion and disease prevention are applied. Current research on the efficiency of health promotion activities is presented.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

NUR 1767 - RISK FACTORS AND HEALTH: A GLOBAL PERSPECTIVE

Minimum Credits: 3
Maximum Credits: 3
The overall objective of this course is to provide the student with a broad description of risk factors and health promotion for individuals, families and communities from a global perspective. Students select a country of interest and apply that country's government, policy and professional organization guidelines and recommendations for health promotion and disease prevention. Current evidence on the efficacy of health promotion activities is studied.

Academic Career: Undergraduate
Course Component: Lecture
NUR 1770 - NURSING CARE OF ADULT EXPERIENCING CARDIAC DYSRHYTHMIAS

Minimum Credits: 2
Maximum Credits: 2
Course is focused on interpretation and management of cardiac dysrhythmias occurring in the adult. Mastery of cardiac rhythm interpretation is the end goal. Critical clinical decision making and nursing responsibilities specific to dysrhythmias interpreted are addressed, including institution of appropriate pharmacological and electrical therapeutic interventions based on ACLS algorithms. Information on basis of electrophysiology, dysrhythmias etiologies and electrocardiographic monitoring is provided. Case studies and multiple examples are used to support repetitive practice in rhythm interpretation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: NUR 1765

NUR 1800 - COORDINATING CLINICAL TRIALS

Minimum Credits: 2
Maximum Credits: 2
The purpose of this course is to provide individuals with a basic understanding of clinical trials research conducted in accordance with federal regulations. Aspects of clinical trials research such as regulatory requirements, informed consent, pre and post study activities, audit procedures, and budgetary issues will be covered. This course will include presentations by individuals experienced in conducting trials; clinical research coordinators, IRB staff, investigational pharmacists, statisticians, and other experts in clinical research.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: NUR 0067 and 1085; PROG: School of Nursing

NUR 1801 - COORDINATING CLINICAL TRIALS PRACTICUM

Minimum Credits: 1
Maximum Credits: 2
The course is designed to familiarize students with roles and responsibilities of a clinical research coordinator through observation during a practicum, discussion of different types of clinical research protocols, and discussion of how these protocols are implemented in a variety of research settings. Each student selects focus area and preceptor who guides observations designed to exemplify the role of the clinical research coordinator. Each student also participates in review of research proposals in NIH funded center at the university of Pittsburgh.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1800; PROG: School of Nursing

NUR 1829 - CONTEM ISSUES CROSS CULTL HEALTH

Minimum Credits: 3
Maximum Credits: 3
Purpose of course is to increase awareness of how delivery and acceptance of health care may be influenced by social, cultural, and environmental factors. It will provide an overview of how these factors influence a person's response to stressors, daily health and living needs. Goal is to help students increase their understanding of culturally congruent care by utilizing cultural concepts, theories, and research. Students will analyze factors that facilitate/ hinder communication about health needs, acceptance of the health care regimen, and access to health care systems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
NUR 1900 - GLOBAL HEALTH CARE

Minimum Credits: 2
Maximum Credits: 2
Cultural competence and embracing diversity are central values for healthcare professionals. In light of the globalization of society, knowledge of differing perspective, traditions, religions, politics, cultures, and health practices is crucial to providing quality healthcare. This course is designed to introduce students to concepts necessary to understand healthcare from a global perspective, to broaden their views of a global society, and to examine their roles within a global community. This course will also introduce students to current school of nursing study abroad programs.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU Elective Basis
Course Requirements: PREQ: NUR 0080 and (0087 or 1110)

NUR 1990 - SENIOR SEMINAR

Minimum Credits: 1
Maximum Credits: 1
The goal of this course is to support the senior student's successful progression to entry-level professional nursing practice. Classroom activities and self-directed learning will prepare students to attain the benchmarks associated with professional licensure and provide a foundation for the continuous self-evaluation and life-long learning required to support professional nursing practice (AACN, 2008).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: H/S/U Basis
Course Requirements: CREQ: NUR 1121 or NUR 1134; LVL: Sr; PROG: School of Nursing (UNURS)

NUR 2000 - RESEARCH FOR EVIDENCE-BASED PRACTICE 1

Minimum Credits: 2
Maximum Credits: 2
This course examines the interaction of theory, research, and clinical expertise in the development of evidence-based nursing practice. Students develop the skills needed to identify relevant research and to critically appraise published studies to evaluate their quality and applicability to clinical practice. Students gain an understanding of the research process, the critical appraisal of published research studies that use a variety of research designs, and the role of research in evidence-based practice.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad Letter Grade
Course Requirements: CREQ: NUR 2011 or NUR 2211 or NUR 2411

NUR 2004 - PATHOPHYSIOLOGY ACROSS LIFE SPAN

Minimum Credits: 4
Maximum Credits: 4
This course is designed to provide the student with a comprehensive theoretical foundation of the phenomena that produce alterations in human physiologic function in diverse populations across the life span. Information gained in this course will prepare the student for subsequent courses related to the diagnosis and management of disease processes associated with pathophysiologic dysfunction/alterations in people of various ethnic/cultural groups across the lifespan.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad Letter Grade
Course Requirements: School of Nursing students only.

NUR 2010 - HEALTH PROMOTION/DEISEASE PREVENTION
Minimum Credits: 3
Maximum Credits: 3
Health promotion and disease prevention are examined from theoretical foundations to clinical applications. The course focuses on individual and community health promotion assessment, screening, and interventions in diverse populations. Epidemiological principles and real clinical examples are discussed as a basis for focusing health promotion assessment and interventions. Course topics are delineated according to health people 2010 goals with a corresponding focus on factors related to health care disparities among vulnerable populations. Current research in health promotion and disease prevention is the basis for identifying appropriate interventions in diverse populations and settings.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad LG/SU3 Basis
Course Requirements: School of Nursing students only.

NUR 2011 - APPLIED STATISTICS FOR EBP

Minimum Credits: 3
Maximum Credits: 3
This course will provide students with the basis for understanding and interpreting commonly used statistical tests, as well as critically appraising their use in published research studies. Content will include descriptive and inferential statistics commonly reported in published research studies including both univariate and multivariate parametric and nonparametric tests. The course will also cover meta-analytic techniques and students will learn to calculate effect sizes.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad LG/SU3 Basis
Course Requirements: School of Nursing students only.

NUR 2031 - DIAGC PHYSCL EXAM LIFE SPAN

Minimum Credits: 3
Maximum Credits: 3
This didactic course focuses on the use of the diagnostic history and physical examination to formulate a health assessment in patient populations across the lifespan. Concentration is on selected theories, principles and techniques from the physical and behavioral sciences essential to obtaining a complete health history and performing a methodical physical examination on patients across the life span.
Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad Letter Grade
Course Requirements: PREQ: NUR 2004 or NUR 2204 or NUR 2404; PLAN: NURSAN-MSN or NURSAN-DNP; SUBPLAN: MSNNNP or DNPNNP or DNPNLNP or DNPPLNP or DNPMSN or MSNPNP or MSNADM or OCNL or ONAD or DNPAGNP-SP or DNPPCNP or DNPPGCP or DNPPMBL

NUR 2044 - NUR GRAD ORIENTATION MODULE

Minimum Credits: 0
Maximum Credits: 0
This module provides a web-based graduate nursing orientation that is designed to provide graduate nursing students with an overview of the school of nursing and information that they will need to successfully complete their programs and achieve their career goals.
Academic Career: GRAD
Course Component: Independent Study
Grade Component: Grad HSU Basis
Course Requirements: School of Nursing students only.

NUR 2061 - ORGANIZTNL & MANAGEMENT THEORY

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the organization and management, particularly of nursing personnel, in health services organizations. Organizational theories, their analysis, and their application to health care services systems will be explored. Management theories will also be discussed. Emphasis will be placed on personnel management aspects relevant to nursing such as licensure, certification, advance practice, nurse extender, etc.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad LG/SU3 Basis
Course Requirements: School of Nursing students only.

**NUR 2680 - INTRO GENETCS & MOLEC THERPUTC**

Minimum Credits: 3
Maximum Credits: 3
This introductory course focuses on the fundamentals of human and molecular genetics. It is designed to give students a basic understanding of genetic concepts and molecular techniques so that this knowledge can be applied to current and future genetic diagnoses and therapies encountered in nursing.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad Letter Grade

**NURSP 2061 - ORGANIZTNL & MANAGEMENT THEORY**

Minimum Credits: 3
Maximum Credits: 3
This graduate level course focuses on organizational, leadership, and management theories and how they apply to health service organizations, both today and in the future. Emphasis will be placed on leading the clinical discipline of nursing based on organizational and systems thinking as well as relevant political and cultural perspectives. Quality and performance improvement strategies, as well as creating and sustaining appropriate levels of change, are explored in order to facilitate the ability to create safe and effective care delivery environments.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad LG/SU3 Basis
Course Requirements: School of Nursing students only.

**NURSP 2092 - LEADERSHIP DEVELOPMENT**

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the application of leadership theory and the development of critical leadership skills necessary for success in today's health care environment. The course is based on five essential competencies for nursing leadership: professionalism, business skills and principles, knowledge of the health care environment, communication and relationship management, and transformational leadership.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Grad LG/SNC
Course Requirements: School of Nursing students only.

**NUTR 1006 - INTRO TO HUMAN NUTRITION**

Minimum Credits: 3
Maximum Credits: 3
This course will cover an overview of the scientific principles of nutrition and application of these principles to humans throughout the life cycle. Major focuses of the course are the classification and function of the six major nutrients, review of current nutrition standards, safety of the food supply, and nutrition misinformation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
NUTR 1600 - INTRODUCTION TO DIETETICS

Minimum Credits: 2
Maximum Credits: 2
This is an introduction to the profession of dietetics. Emphasis will be placed on the scope of the profession of dietetics practice, the role and functions of registered dietitian nutritionists, and the education requirements for entry into practice.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

NUTR 1602 - NUTRITION ASSESSMENT 1

Minimum Credits: 3
Maximum Credits: 3
This course will focus on the rationale for and the use of a variety of standards used in assessing and planning the quality and quantity of the food and nutrient intake of individuals and groups. It will include in-depth study and application of commonly used reference standards and tools used for evaluating levels and proportions of macronutrients, micronutrients and various dietary food components. Assessment of health indicators in individuals and populations will also be addressed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Clinical Dietetics-Nutrition (BS, BPH, BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

NUTR 1603 - NUTRITION ASSESSMENT 2

Minimum Credits: 3
Maximum Credits: 3
Introduction to professional practice methods and skills in nutrition focused physical examination. Learning experiences will include formal class presentations, class discussions, case-based problem solving and skill development laboratory sessions. Knowledge based learning leading to examination technique simulations for anthropometric measurements for body composition, nutrition focused physical examination for malnutrition diagnosing and examination techniques, e.g., vital signs, head and neck exam, intra and extra-oral exams, heart and lung auscultation, as well as, abdominal auscultation and palpation are included. At the completion of the course competency in application of nutrition focused physical examination techniques will be assessed on an individual basis.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Clinical Dietetics-Nutrition (BS, BPH, BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

NUTR 1604 - FOOD SERVICE MANAGEMENT WITH LAB

Minimum Credits: 3
Maximum Credits: 3
This course presents the basic principles and skills of food service management and leadership. Learning experiences include lectures, discussions, and required field trips. Please note, no other courses can be scheduled during the break between the morning and afternoon class sessions as this time will be needed for travel to field trips sites.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Clinical Dietetics-Nutrition (BS, BPH, BS-H)

NUTR 1605 - PRINCIPLES OF NUTRITION EDUCATION AND COUNSELING

Minimum Credits: 3
Maximum Credits: 3
Concepts and components of the teaching-learning process and their application in the dietetics practice. Experience in the instructional planning and implementation functions of clinical dietitians is emphasized.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Letter Grade

**Course Requirements:** PLAN: Clinical Dietetics-Nutrition (BS, BPH, BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1608 - PROFESSIONAL TRENDS AND ISSUES**

Minimum Credits: 3
Maximum Credits: 3
Identification and discussion of critical issues pertaining to the profession of dietetics.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Letter Grade

**Course Requirements:** PLAN: Clinical Dietetics-Nutrition (BS, BPH, BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1609 - CLINICAL BIOCHEMISTRY**

Minimum Credits: 3
Maximum Credits: 3
This course will introduce the basic concepts of biochemistry. The structures and function of the major biomolecules, carbohydrates, lipids, proteins and nucleic acids will be discussed and their metabolism integrated.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Letter Grade

**Course Requirements:** PLAN: Clinical Dietetics-Nutrition (BS, BPH, BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1610 - FOOD SCIENCE 1**

Minimum Credits: 3
Maximum Credits: 3
This is an introductory course emphasizing the chemical and physical properties of food in relation to its selection, quality, and preparation. Experience in the construction, modification and preparation of recipes to meet various dietary needs is also provided.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Letter Grade

**Course Requirements:** PREQ: NUTR 1602; PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1612 - FOOD AND CULTURE**

Minimum Credits: 3
Maximum Credits: 3
Introduction to ethnic influence on the diversity of American food patterns. Social, cultural, economic, geographic, and religious factors are considered.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Letter Grade

**Course Requirements:** PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1613 - FOOD SCIENCE 1 LABORATORY**

Minimum Credits: 1
Maximum Credits: 1
Study of the chemical and physical changes that occur in food as a result of various food preparation methods and their effects on nutrient quality. Experience in the construction, modification and preparation of recipes to meet various dietary needs is also provided.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: NUTR 1602; PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1614 - APPLICATION OF CRITICAL THINKING TO NUTRITION ISSUES**  
Minimum Credits: 3  
Maximum Credits: 3  
An application of critical thinking skills to evaluate nutrition issues.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Clinical Dietetics-Nutrition (BS, BPH, BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1620 - MACRONUTRIENT METABOLISM**  
Minimum Credits: 3  
Maximum Credits: 3  
The first of a two-course sequence in advanced nutrition and metabolism presenting the principles of normal nutrition and their application in providing nutritional care and guidance. Emphasis is placed on the macronutrients and energy balance.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1621 - MICRONUTRIENT METABOLISM**  
Minimum Credits: 3  
Maximum Credits: 3  
Second of a two-course sequence in advanced nutrition and metabolism. Emphasis is placed on the essential micronutrients.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1622 - NUTRITION IN THE LIFE CYCLE**  
Minimum Credits: 3  
Maximum Credits: 3  
The study of the physiological, developmental, sociological, and environmental factors that affect nutrient requirements and recommendations at various stages of the life cycle.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1630 - NUTRITION THERAPY 1**  
Minimum Credits: 3  
Maximum Credits: 3  
The first of a two-course sequence which will provide an introduction to medical nutrition therapy in the treatment of acute and chronic diseases.
The course will cover pathophysiology and treatment of specific diseases, nutrition implications of specific diseases, nutrition assessment, determination of nutrient requirements, and nutrition interventions including calculation of modified diets.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1632 - NUTRITION THERAPY 2**

**Minimum Credits:** 3  
**Maximum Credits:** 3

The second of a two-course sequence which will provide an introduction to medical nutrition therapy in the treatment of acute and chronic diseases. The course will cover pathophysiology and treatment of specific diseases, nutrition implications of specific diseases, nutrition assessment, determination of nutrient requirements, and nutrition interventions including calculation of modified diets.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**NUTR 1699 - INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 6

Provides advanced students an opportunity to explore in depth an area of particular interest to them. It is the student's responsibility to find a faculty member willing to undertake such a tutorial.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SU  
**Course Requirements:** PLAN: Nutrition and Dietetics (BPH; BS; BS-H) or Clinical Dietetics - Nutrition (NDNUTR-ND)

**PERS 0101 - PERSIAN (FARSI) 1**

**Minimum Credits:** 4  
**Maximum Credits:** 4

The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PERS 0102 - PERSIAN (FARSI) 2**

**Minimum Credits:** 4  
**Maximum Credits:** 4

At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0421 or PERS 0101; MIN GRADE: 'C' FOR LISTED COURSES

**PERS 0103 - PERSIAN (FARSI) 3**
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0422 or PERS 0102; MIN GRADE: 'C' FOR LISTED COURSES

**PERS 0104 - PERSIAN (FARSI) 4**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0423 or PERS 0103; MIN GRADE: 'C' FOR LISTED COURSES

**PERS 0105 - PERSIAN (FARSI) 5**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This course will continue to focus on the development and integration of students' language skills at a more advanced level. It will also aim to broaden students' vocabulary to improve their spoken proficiency in a variety of communicative contexts and situations. At this level, students will read various texts and literary works from Persian poetry, then discuss and analyze each text and poetry to understand the meaning and to improve comprehension of advance level grammar forms and culture specific vocabulary. Because Persian language and culture are closely related to each other, students will read and extract details that will help them develop more in depth understanding of Persian culture.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0424 or PERS 0104; MIN GRADE 'C' FOR ALL LISTED COURSES

**PERS 0106 - PERSIAN (FARSI) 6**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

In this advanced course, students will integrate their language skills from all previous levels. At this level, students will identify an area of interest in Persian culture, gather sources to prepare discussion and analysis, and demonstrate advance levels of language comprehension.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: PERS 0105; MIN GRADE 'C'

**PERS 0107 - PERSIAN (FARSI) 7**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

The main goal of this course is to improve students' oral communication skills to an advanced professional level, and to develop a deeper knowledge of the culture. Students will analyze and discuss, in detail, about various issues such as, politics, religion, social problems, and film. Much of the course will adapt to the areas of interest or field specialty of the students.
PERS 0108 - PERSIAN (FARSI) 8

Minimum Credits: 3
Maximum Credits: 3
This course provides additional practice to help students achieve advanced linguistic fluency and accuracy. Students acquire mastery of speaking and pronunciation at a professional level through the use of authentic materials from various sources such as (Persian film, online Persian TV, internet radio, songs, newspapers, short stories, and more). The ultimate goal of this course is to improve their communication skills with fluency and accuracy and a more in-depth understanding of Persian culture.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PERS 0107; MIN GRADE 'C'

PERS 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

PERS 1905 - UNDERGRADUATE TEACHING ASSISTANT IN PERSIAN (FARSI)

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

PERS 1909 - SPECIAL TOPICS IN PERSIAN (FARSI)

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PETE 1097 - SPECIAL PROJECTS

Minimum Credits: 1
Maximum Credits: 6
Student develops an individual project under supervision of a faculty member. Project may be experimental, design-oriented, or instructional. A written report is prepared.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

PETE 1160 - PETROLEUM RESERVOIR ENGINEERING
Minimum Credits: 3
Maximum Credits: 3
This course covers the principles of reservoir engineering and material balance calculation in petroleum reservoirs. The topics include petroleum origin and oil occurrence and migration; oil, gas, and gas-condensate reservoirs; basic drilling of oil and gas wells; p-v-t behavior of natural gas; material balances in gas reservoirs; oil reservoirs under simultaneous dissolved gas drive, gas cap drive, and water drive; generalized material balance in petroleum reservoirs; basic equations for fluid flow in reservoirs, absolute, effective, and relative permeabilities; and a design project on reservoir calculations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0250 or 0290 or 1270 or 0202 or 1035; PROG: Swanson School of Engineering

PETE 1201 - RECOVERY OF OIL BY WATERFLOODING

Minimum Credits: 3
Maximum Credits: 3
Theory of immiscible fluid displacement starting with frontal advance theory and applying it to waterflooding, fluid patterns, sweep efficiency, stratified reservoirs, etc. Relative permeability experiments are simulated.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

PETE 1204 - ENHANCED OIL RECOVERY PROCESSES

Minimum Credits: 3
Maximum Credits: 3
This course covers different topics on enhance oil recovery processes (co2, thermal, miscible fluids and surfactants); coal-bed methane, enhanced methane recovery, and underground coal gasification; surface and in-situ heavy oil, tar sand and oil shale production; and co2 capture, sequestration and disposal. The fundamentals, thermodynamics, reaction kinetics and transport phenomena as well as the environmental issues and regulations related to these topics are also covered.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: Swanson School of Engineering

PETE 1205 - PETROLEUM PRODUCTION ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
This course covers principles of oil and gas production from hydrocarbon-bearing formations. Topics include: flow through porous media of incompressible, compressible and slightly compressible fluids; reservoir, producing formation, vertical lift, and chock performances; principles of gas lift, gas lift valves and design; and sucker rod pumping design; and design project on artificial gas lift.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: MATH 0202 or 0250 or 0290 or 1035 or 1270; PROG: Swanson School of Engineering

PETE 1207 - PETROLEUM AND NATURAL GAS PROCESSING

Minimum Credits: 3
Maximum Credits: 3
The course covers different topics on natural gas, petroleum and petrochemical processing. The topics include natural gas cleanup, methane reforming for h2 production, partial oxidation of ch4 for synthesis gas production, and chemicals from methanol; refinery feed-stocks, crude
distillation and refinery products, alkylation, hydrotreating, catalytic reforming and isomerization, catalytic cracking, resid, tar sands and oil shale processing; and methanol/other alcohols, ethylene, fertilizer, and plastic production plants.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

**PETE 1208 - PETROLEUM DRILLING AND WELL COMPLETION**

Minimum Credits: 3  
Maximum Credits: 3

This course covers different topics related to drilling operations; directional drilling techniques; completion operations; and work-over operations. The drilling operations encompass drilling rig components, bit selection program, drilling fluid types, cementing program design and well control/safety. The directional drilling techniques include: well-path design/applications, downhole motor components, directional surveys, and logging while drilling. The well completion operations contain: formation evaluation tools, open-hole log interpretation, coring tools, flow testing, perforating, hydraulic fracturing and other stimulation techniques. The work-over operations comprise work-over rig components, cased hole log interpretation, plugs/packers/fishing tools, squeeze job design, casing integrity tests and stimulation evaluation. A special project on casing design is also included.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PROG: Swanson School of Engineering

**PETE 1209 - HYDRAULIC FRACTURING MECHANICS AND APPLICATIONS**

Minimum Credits: 3  
Maximum Credits: 3

Course description: this class will prepare students to wisely and critically design hydraulic fracturing treatments as well as make informed recommendations to employers, governments, and communities about the risks and benefits of hydraulic fracturing methods. Upon completion of this course, students will be equipped to use engineering formulae to estimate hydraulic fracture dimensions, evaluate strengths and weaknesses of various modeling approaches, characterize subsurface conditions from wellbore pressure analysis, make sound recommendations for monitoring, and compare and contrast approaches and risks for a range of application domains.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: CHE 0300; PROG: Swanson School of Engineering

**PETE 1212 - CO2 FOR ENHANCED OIL RECOVERY AND FRACKING**

Minimum Credits: 3  
Maximum Credits: 3

This course will cover the physical properties of CO2 that make it an attractive solvent for enhanced oil recovery (EOR), the natural and anthropogenic sources of CO2, the types of fields that are suitable for CO2 EOR, and the mechanisms responsible for CO2 increasing oil recovery. The current status of CO2 EOR in the United States will also be reviewed, along with its potential for future expansion. The foremost technical challenges of CO2 EOR, namely mobility control and conformance control, will be discussed along with a current research efforts. The course will conclude with a brief review of how CO2 has been used as a hydraulic fracturing, whether as a pure fluid, as the gaseous component of foams, or as an energizing component.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Grad LG/SU3 Basis  
**Course Requirements:** PREQ: CHE 0100 and 0200; PLAN: Chemical Engineering (BSE); PROG: Swanson School of Engineering

**PHARM 1095 - COMMUNITY CONNECTOR COURSE**
This course is especially well-suited for students from SHRS, PHARM, NUR and School of Social Work. This seminar focuses on the patient population which is a high risk population who are vulnerable to frequent readmissions to the hospital. Emphasis will be placed on: 1) understanding this patient population, the health system and health behavior challenges associated with this population, and systematic needs associated with reducing their health care needs 2) The course will include presentations by researchers, clinicians, and healthcare industry experts. Students will need to be available for approximately 6, out-of-classroom activities during the semester. This course will expose students to the patient population through visits with clinicians at the hospital, home, and community, including in-home assessments, patient education sessions, and behavior change (motivational interviewing) techniques. Students may be paired with a nurse, speech language pathologist, occupational therapist, or physical therapist during one of these activities. Each out-of-classroom visit often requires a 4-hour block of time.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** School of Pharmacy students only.

### PHIL 0010 - CONCEPTS OF HUMAN NATURE

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to some ways in which ethical and social thought has been influenced by different views of human nature. Readings are from such authors as Plato, Hobbes, Rousseau, Marx, and Freud.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis

### PHIL 0012 - CONCEPTS HUMAN NATURE/Writing Practicum

Minimum Credits: 4  
Maximum Credits: 4  
This practicum is the special writing recitation for the lecture course "Concepts of Human Nature".

**Academic Career:** Undergraduate
**Course Component:** Credit Laboratory
**Grade Component:** LG/SNC Elective Basis

### PHIL 0080 - Introduction to Philosophical Problems

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to some classical problems of philosophy. Topics vary, but might include skepticism, free will, the existence of god, and the justification of ethical beliefs.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis

### PHIL 0082 - Introduction Philosophical Problem/Writing Practicum

Minimum Credits: 4  
Maximum Credits: 4  
An introduction to some classical problems of philosophy. Topics vary, but might include skepticism, free will, the existence of god, and the justification of ethical beliefs. Special writing component for PHIL 0080, "Introduction to Philosophical Problems".

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis
PHIL 0200 - HISTORY OF ANCIENT PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
The aim of this course is to introduce students to some of the main achievements and leading ideas of ancient Greek philosophy up to classical times. Emphasis will be on understanding and evaluating the arguments and ideas of the Greek philosophical tradition.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0202 - HISTORY ANCIENT PHILOSOPHY/WRITING PRACTICUM

Minimum Credits: 4
Maximum Credits: 4
The aim of this course is to introduce students to some of the main achievements and leading ideas of ancient Greek philosophy up to classical times. Emphasis will be on understanding and evaluating the arguments and ideas of the Greek philosophical tradition. Special writing component for PHIL 0200, "History of Ancient Philosophy".

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0210 - HISTORY OF MODERN PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
An introduction to the philosophical period from Descartes through Kant. Special attention is given to at least one rationalist, one empiricist, and Kant.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0212 - HISTORY OF MODERN PHILOSOPHY/WRITING PRACTICUM

Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "History of Modern Philosophy".

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0220 - INTRODUCTION TO EXISTENTIALISM

Minimum Credits: 3
Maximum Credits: 3
This introductory level course explores the central existentialist question of how to be a genuine individual or self through reading of several major authors, such as Pascal, Kierkegaard, Dostoievski, Nietzsche, and Sartre.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0222 - INTRODUCTION TO EXISTENTIALISM/WRITING PRACTICUM
Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "Introduction to Existentialism"; it includes extra emphasis on and credit for instruction in writing skills.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0230 - PHILOSOPHY AND FILM

Minimum Credits: 3
Maximum Credits: 3
This is an introductory aesthetics course dealing with philosophy and film.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0275 - INTRODUCTION TO CHINESE PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3

PHIL 0300 - INTRODUCTION TO ETHICS

Minimum Credits: 3
Maximum Credits: 3
This is an introductory course considering the question of one fundamental moral principle - right and wrong. The results are applied to moral problems of serious interest today.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0302 - INTRODUCTION TO ETHICS/WRITING PRACTICUM

Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "Introduction to Ethics".
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0320 - SOCIAL PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
An introduction to some traditional philosophical perspectives on the nature of society. Philosophers studied might include Plato, Hobbes, Marx, and Twentieth-Century social theorists.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
PHIL 0322 - SOCIAL PHILOSOPHY/WRITING PRACTICUM

Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "Social Philosophy".
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0330 - POLITICAL PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
This introductory level undergraduate course studies several important views on the nature and justification of government, such as those of Plato, Hobbes, and Marx.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0332 - POLITICAL PHILOSOPHY/WRITING PRACTICUM

Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "Political Philosophy".
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0350 - PHILOSOPHY AND PUBLIC ISSUES

Minimum Credits: 3
Maximum Credits: 3
The aim of this introductory undergraduate course is to encourage systematic and clear thought about issues of public importance by philosophic reflection which emphasizes the implications of different moral and political theories for these issues.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0352 - PHILOSOPHY AND PUBLIC ISSUES/WRITING PRACTICUM

Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "Philosophy and Public Issues".
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0360 - INTRODUCTION TO BIOMEDICAL ETHICS

Minimum Credits: 3
Maximum Credits: 3
This introductory level undergraduate course examines various ethical problems arising in medicine, such as euthanasia, abortion, and the allocation of resources.
PHIL 0362 - INTRODUCTION TO BIOMEDICAL ETHICS CREDIT LABORATORY

Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "Introduction to Bioethics".

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0380 - WOMEN AND PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
Primary objectives will be to acquaint students with the history of the relation between women and philosophy in the Western tradition and to teach students to think and write clearly.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0440 - MINDS AND MACHINES

Minimum Credits: 3
Maximum Credits: 3
This introductory level course is devoted to explicating and critically evaluating the thesis that the human mind, or at least its cognitive faculty, can be understood as a computing machine. Readings are primarily from contemporary authors, and include both scientists and philosophers.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 0441 - MINDS AND MACHINES/RECITATION

Minimum Credits: 0
Maximum Credits: 0
This practicum is the standard recitation for the lecture course "Minds and Machines".

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Satisfactory/No Credit

PHIL 0442 - MINDS AND MACHINES/Writing Practicum

Minimum Credits: 4
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "Minds and Machines".

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

PHIL 0450 - THEORIES OF KNOWLEDGE & REALITY
This course gives a broad introduction to classic and contemporary work on central questions in metaphysics and epistemology. Central topics of concern will be the nature of reality and the possibility of knowledge. Along the way we will discuss skeptical arguments to the effect that knowledge of certain aspects of reality is impossible and classic and contemporary responses to them. We will also discuss a number of topics in metaphysics, which may include the nature of the self, time, the relationship between mind and body, the existence of god, and debates between materialists and idealists.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PHIL 0452 - THEORIES OF KNOWLEDGE & REALITY / WRIT LABORATORY

Minimum Credits: 4  
Maximum Credits: 4  
This writing laboratory is the special writing recitation for the lecture course "Theories of Knowledge & Reality".  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

PHIL 0460 - INTRODUCTION TO PHILOSOPHY OF MIND

Minimum Credits: 3  
Maximum Credits: 3  
This course gives a broad introduction to contemporary work on the philosophy of mind. It will primarily focus on the nature of consciousness, the mind-body problem, and may include how we know the minds of other human beings, the nature of personal identity over time, as well as discussion of the theory of action.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PHIL 0462 - INTRODUCTION TO PHILOSOPHY OF MIND / WRIT LABORATORY

Minimum Credits: 4  
Maximum Credits: 4  
This writing laboratory is the special writing recitation for the lecture course "Introduction to Philosophy of Mind".  
Academic Career: Undergraduate  
Course Component: Credit Laboratory  
Grade Component: LG/SNC Elective Basis

PHIL 0470 - PHILOSOPHY OF RELIGION

Minimum Credits: 3  
Maximum Credits: 3  
A critical examination of the rationality of faith in the existence of god. Traditional arguments both for and against the existence of god are considered, along with pragmatic justifications of faith based upon its beneficial consequences.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PHIL 0472 - PHILOSOPHY OF RELIGION/WRITING PRACTICUM

Minimum Credits: 4  
Maximum Credits: 4
This practicum is the special writing recitation for the lecture course "Philosophy of Religion".

**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**PHIL 0473 - PHILOSOPHY OF RELIGION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
An examination of the arguments for and against the existence of god.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PHIL 0500 - INTRODUCTION TO LOGIC**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
An introduction to the concepts and methods of modern deductive logic. Propositional logic is emphasized, but quantificational logic is touched upon.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PHIL 0610 - PHILOSOPHY AND SCIENCE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
An introductory course in philosophy of science.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PHIL 0612 - PHILOSOPHY AND SCIENCE/WRITING PRACTICUM**

**Minimum Credits:** 4  
**Maximum Credits:** 4  
This practicum is the special writing recitation for the lecture course "Philosophy and Science".  
**Academic Career:** Undergraduate  
**Course Component:** Credit Laboratory  
**Grade Component:** LG/SNC Elective Basis

**PHIL 0850 - PHILOSOPHY AND LIBERAL DEMOCRACY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course provides an introduction to several problems common to philosophers and politics and introduces students to the different theories, modes of argument, and techniques of analysis used by the two disciplines to understand them. It is intended to help students deepen their understanding of the dominant political stance of our society.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: Any Other Philosophy Course; LVL: Fr, So, Jr
PHIL 0890 - TOPICS IN PHILOSOPHY (VARIOUS)

Minimum Credits: 3  
Maximum Credits: 3  
This intensive but introductory level seminar is reserved for special philosophical topics that do not fit standard course-catalog categories. Issues discussed vary from year to year, but tend to be narrowly focused and specialized.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis

PHIL 1020 - PLATO

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced undergraduate course examining Plato's main views both in their historical context, and as they influence our own thinking today; the relations between Socrates and the sophists are also studied.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: Any other Philosophy course.

PHIL 1040 - ARISTOTLE

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced undergraduate course examining the basic concepts of Aristotle's metaphysics, physics, ethics and logic.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1060 - HELLENISTIC PHILOSOPHY

Minimum Credits: 3  
Maximum Credits: 3  
An examination, at the advanced undergraduate level, of the three major schools of the Hellenistic age--the stoics, epicureans, and skeptics--and their views about ethics, epistemology, and the nature of reality.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1070 - TOPICS IN ANCIENT PHILOSOPHY

Minimum Credits: 3  
Maximum Credits: 3  
An investigation of a particular topic or figure in the field of ancient philosophy.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1080 - MEDIEVAL PHILOSOPHY
Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course examines selected major figures in European philosophy during the middle ages.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: Any Other Philosophy Course

**PHIL 1110 - RATIONALISM**

Minimum Credits: 3
Maximum Credits: 3
An examination, at the advanced undergraduate level, of several important rationalist philosophers, such as Hobbes, Descartes, Spinoza, and Leibniz.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: Any Other Philosophy Course

**PHIL 1140 - EMPIRICISM**

Minimum Credits: 3
Maximum Credits: 3
An examination, at the advanced undergraduate level, of several important empiricist philosophers, such as Bacon, Locke, Berkeley, Hume, and Reid.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: Any Other Philosophy Course

**PHIL 1170 - KANT**

Minimum Credits: 3
Maximum Credits: 3
An introduction to the philosophy of Kant, focusing on the "critique of pure reason". The course seeks to enable the advanced undergraduate to understand the theories and arguments of this revolutionary and rewarding work.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: PHIL 0210 or 0212 or any 1000-level Philosophy course.

**PHIL 1180 - 19TH CENTURY PHILOSOPHY**

Minimum Credits: 3
Maximum Credits: 3
A survey, at the advanced undergraduate level, of the thought and unity of the three great German philosophers of the nineteenth century; Hegel, Marx, and Nietzsche.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: Any Other Philosophy Course

**PHIL 1200 - 20TH CENTURY ANALYTIC PHILOSOPHY**
Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course examines major trends in contemporary analytic philosophy, including, for instance, some (but not all) of logical empiricism, logical positivism, Wittgenstein and his followers, ordinary language ("oxford") philosophy, Quine and his followers, Sellars and his followers, and so on.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: Any other Philosophy course.

PHIL 1225 - WITTGENSTEIN

Minimum Credits: 3
Maximum Credits: 3
In depth study of some central sections of Wittgenstein's Philosophical Investigations. The objective will be not only to improve understanding of issues about language, mind, and reality raised in that brilliant but cryptic work, but also to situate the work historically in relation to Wittgenstein's earlier masterpiece Tractatus Logico-Philosophicus; the analytic tradition in 20th century philosophy; and modern philosophy in general.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1240 - AMERICAN PRAGMATISM

Minimum Credits: 3
Maximum Credits: 3
This is an advanced undergraduate course in the "classical" American pragmatists, especially Pierce, James, Dewey, and Mead.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1290 - TOPICS IN HISTORY OF PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
Wittgenstein is perhaps the most important philosopher of the twentieth century. The Tractatus is the only philosophical work that Wittgenstein published in his lifetime, and it went on to become a foundational text in the analytic tradition. It was read line by line by members of "The Vienna Circle" - a group of the leading philosophers, scientists and mathematicians of the early twentieth century - and it remains an inspirational, puzzling, and deeply controversial text. This course aims to give you the resources to begin to interpret the Tractatus for yourself. You will explore the rich historical and philosophical background of early analytic philosophy, and by doing so you will gain a critical understanding of some of the most central topics in philosophy today.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 1300 - ETHICAL THEORY

Minimum Credits: 3
Maximum Credits: 3
An advanced undergraduate examination of various topics in ethical theory, such as ethical relativism, subjective and objective value, the relation of reason and ethics, ethical realism, utilitarianism and contractarianism, and virtues and vices.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHIL 0300 or 0330 or 0332 or 0350 or any 1000 level Philosophy course.

PHIL 1310 - HISTORY OF ETHICS

Minimum Credits: 3
Maximum Credits: 3
An examination of some of the principal moral philosophers in one or more of the major historical periods from Homeric times to the present day--such as Plato, Aristotle, Aquinas, Hobbes, Hume, Kant, Nietzsche, Mill, and Rawls.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHIL 1310 or any 1000 level Philosophy course.

PHIL 1315 - APPLIED ETHICS

Minimum Credits: 3
Maximum Credits: 3
The application of ethical theory to specific issues of contemporary life. Specific topics vary with each offering of the course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHIL 1315 or any 1000 level Philosophy course.

PHIL 1320 - TOPICS IN SOCIAL PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course concentrates on a few selected philosophical problems concerning the nature of society; the selection will vary from one offering of the course to another. The course may be historical or topical in approach.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHIL 1320 or any 1000 level Philosophy course.

PHIL 1330 - TOPICS IN POLITICAL PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course concentrates on a few selected philosophical problems concerning the nature and justification of government; the selection will vary from one offering of the course to another.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHIL 1330 or any 1000 level Philosophy course.

PHIL 1340 - FEMINIST PHILOSOPHY

Minimum Credits: 3
Maximum Credits: 3
A comparison of biological, psychological, and economic theories of the nature and causes of the oppression of women. Authors studied might include de Beauvoir, Freud, Marx, Veblen, and Emma Geldman.
Academic Career: Undergraduate
Course Component: Lecture
PHIL 1360 - BIOMEDICAL ETHICS

Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course examines a selection of ethical problems arising in medicine, such as euthanasia, abortion, and the allocation of resources, and/or ethical issues relating to other species, such as vegetarianism, animal rights, and possible interplanetary morality. The selection will vary from one offering of the course to the next.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1370 - PHILOSOPHY OF ART

Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course addresses philosophical problems that arise in connection with art, such as the nature of works of art, the comparison and contrast between representational and non-representational art, the definition of beauty, and special obligations concerning art works.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1380 - BUSINESS ETHICS

Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course considers a selection of ethical issues that arise in connection with business needs and practices, such as employer-employee relations, truth in advertising, responsibilities to consumers, fair and unfair competitive practices, environmental effects, contractual obligations, liability for damages, and governmental regulation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1385 - ETHICS AND ECONOMICS

Minimum Credits: 3
Maximum Credits: 3
Contemporary societies, at least in the West, are often characterized in terms of two basic social institutions: liberal democracy and free-market capitalism. This course explores these institutions in a philosophical context.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 1390 - PHILOSOPHY OF LAW

Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course examines a selection of philosophical questions that arise in connection with the theory and practice of law, including constitutional, criminal, and tort law. Topics might include such issues as the comparative role of judges and legislators in making law, the
nature of justice, and the relation of law to morality.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1395 - ETHICS AND PRACTICAL REASON

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 1400 - RIGHTS AND HUMAN RIGHTS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 1410 - PHILOSOPHY OF ACTION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 1420 - PHILOSOPHY OF LANGUAGE

Minimum Credits: 3
Maximum Credits: 3
This is an advanced undergraduate course in recent and contemporary philosophy of language; topics covered vary somewhat, but typically include many of: reference and descriptions, empiricist criteria of meaning, truth, the theory of speech acts, the analytic-synthetic distinction, theory of translation, possible worlds semantics, pragmatic theories of meaning, and so on.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Philosophy Course

PHIL 1440 - PHILOSOPHY OF MIND

Minimum Credits: 3
Maximum Credits: 3
This is an advanced undergraduate course in the philosophy of mind, taking up problems of both historical and contemporary interest. Topics vary, but are likely to include many of mind-body dualism, materialist reductionism, phenomenalism, the other-minds problem, philosophical behaviorism, qualia, propositional attitude ascriptions, intentionality, and so on.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course
PHIL 1460 - THEORY OF KNOWLEDGE

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced undergraduate course in recent and contemporary epistemology. Topics vary somewhat, but generally include many of the following: skepticism, sense data and the myth of the given, induction and confirmation, definition of "knowing-that-p", holism and coherence, the status of common sense, and so on.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1470 - PHILOSOPHY OF RELIGION

Minimum Credits: 3  
Maximum Credits: 3  
This advanced undergraduate course examines critically a selection of philosophical issues that arise in connection with religious faith, such as the rationality of believing in the existence of god, possible pragmatic justifications of faith based upon its beneficial consequences, relations between religious and scientific knowledge, and so on.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1480 - METAPHYSICS

Minimum Credits: 3  
Maximum Credits: 3  
This advanced undergraduate course considers a selection of central problems in metaphysics, such as the problems of realism, essentialism, free will, necessity and possibility, substance and property, persistence through time (including personal identity), the nature of truth, and so on.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1490 - TOPICS IN SYSTEMATIC PHILOSOPHY

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced undergraduate course devoted to specific problem areas in contemporary philosophy that are not dealt with in regular courses. Thus, the topics covered will vary considerably from one offering of the course to the next, but they might include such things as the theory of action, the philosophy of history, the free-will problem, realism and relativism, personal identity, and such like.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1500 - SYMBOLIC LOGIC

Minimum Credits: 3  
Maximum Credits: 3  
This advanced undergraduate course develops skills in formal and informal reasoning in predicate-quantifier logic, and covers formal semantics for sentential logic, informal semantics for predicate-quantifier logic, and elementary syntactic metatheory.  
Academic Career: Undergraduate
PHIL 1520 - LOGICAL METATHEORY

Minimum Credits: 3  
Maximum Credits: 3  
A study of some of the fundamental concepts, results, and proofs in symbolic logic. Topics to be covered include propositional and predicate calculi, first-order theories and their models, Loewenheim-Skolem theorem, Peano arithmetic, and Goedel's incompleteness theorem.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PHIL 0500

PHIL 1530 - SET THEORY

Minimum Credits: 3  
Maximum Credits: 3  
An elementary development of axiomatic set theory, together with a philosophical discussion of set-theoretic foundations of mathematics.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PHIL 1500

PHIL 1540 - COMPUTABILITY THEORY

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to the theory of computability. Topics include models of computation, decidability, enumerability, computational complexity, and computability and the philosophy of mind.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PHIL 1500

PHIL 1550 - PROBABILITY AND INDUCTION

Minimum Credits: 3  
Maximum Credits: 3  
A survey of major issues regarding inductive reasoning in everyday life and in science. Various concepts of probability will be examined and related to human decision making. The classic problems of justification and induction, due to David Hume, will be discussed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PHIL 1500

PHIL 1555 - RATIONALITY

Minimum Credits: 3  
Maximum Credits: 3  
This course will focus on an influential analysis of rationality: the game-theoretic notion, which has agents attempting to maximize their expected utility. We will consider the foundations of this approach, criticisms of it, and applications of it to several areas of philosophy (including political philosophy, philosophy of language, and philosophy of science).
PHIL 1580 - PHILOSOPHY OF MATHEMATICS

Minimum Credits: 3
Maximum Credits: 3
A survey of issues in the philosophy of mathematics, emphasizing both a historical perspective and contemporary logical foundations of mathematics. Special attention is given to geometry or number theory.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1590 - TOPICS IN LOGIC

Minimum Credits: 3
Maximum Credits: 3
An advanced undergraduate course concentrating on some special topic in logic, such as algebraic logic, modal logic, relevance logic, theory of truth, applications of logic to philosophy of science, or foundations of measurement.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHIL 1500

PHIL 1600 - PHILOSOPHY & RISE MODERN SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course explores the mutually reinforcing relationships between modern philosophy and modern empirical science in and around the seventeenth century. Authors studied might include Copernicus, Galileo, Bacon, Descartes, Locke, Newton, and Leibniz, as well as contemporary historians of science and philosophy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHIL 0500

PHIL 1610 - INTRO TO PHILOSOPHY OF SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course provides a broad, introductory survey of current issues in philosophy of science and treats philosophical problems such as confirmation, which are common to all sciences, as well as problems peculiar to individual sciences.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1612 - PHIL OF 20TH CENTURY PHYSICS

Minimum Credits: 3
Maximum Credits: 3
An examination of the fascinating philosophical problems to which modern physical theories have given rise. No previous formal training in physics or mathematics will be presupposed, since the basic physical ideas needed will be introduced largely qualitatively with an emphasis on concepts rather than equations. Topics will vary from year to year with instructor, but center around classical mechanics, quantum mechanics, and relativity theory.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1640 - PHILOSOPHY OF PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
This advanced undergraduate course covers such topics as mind-body reductionism, behaviorism, functionalism, cognitivism, and the relation of artificial intelligence research to psychological theory.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1650 - PHILOSOPHY OF BIOLOGY

Minimum Credits: 3
Maximum Credits: 3
Philosophy of biology will consider foundational conceptual issues in biology like the nature and structure of biological explanation, the possibility of laws in evolutionary theory, the relationship between different causal components of biological processes (genetics and development), the problem of species reality and classification, the explanatory character of ascription of biological function, and the extension of biological explanations to human psychology and culture.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1660 - PARADOX

Minimum Credits: 3
Maximum Credits: 3
This course explores paradoxes both for the fun of untangling an intriguing puzzle and for the more serious reason of the easy access they provide to some of the most important foundational issues in philosophy and the sciences.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1670 - PHILOSOPHY OF NEUROSCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course will serve as an introduction to the conceptual problems around neuroscience for students with and without a background in experimental neuroscience.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
PHIL 1682 - FREEDOM AND DETERMINISM

Minimum Credits: 3
Maximum Credits: 3
This course analyzes three concepts of determinism--the logical determinism, logical determinism or fatalism, and physical determinism--and examines the various philosophical arguments designed either to show that determinism and free will do clash or alternatively that they are reconcilable.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1690 - TOPICS IN PHILOSOPHY OF SCIENCE

Minimum Credits: 3
Maximum Credits: 3
Discussion, at the advanced undergraduate level, of selected problems such as confirmation, concept formation, the nature of theories. In any given term, the course might focus on problems in physical, biological, or social sciences.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any Other Philosophy Course

PHIL 1760 - RELIGION AND RATIONALITY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHIL 1762 - THE GUIDE OF THE PERPLEXED

Minimum Credits: 3
Maximum Credits: 3
Moses Maimonides (1138-1204) was the greatest Jewish thinker of the medieval period, and remains highly influential today. Born in Spain, he became the leading rabbinic authority of his time by writing a compendium of Jewish law, the Mishnah Torah. He was also famous as a physician and author of medical works. His widest impact, however, has been through his masterpiece of philosophy of religion, The Guide of the Perplexed. This engaging, elusive book is important not only for its influence on such major thinkers as Aquinas, Spinoza, Leibniz, and Newton, but also for its insight into questions of religion and rationality. In this course we will study virtually all of the Guide, giving special attention to Maimonides' account of the fall, his theory of religious language, his arguments for the existence of god, his doctrine of creation, his teachings on religious experience, prophecy, and revelation, and his views on human perfection and immortality. In our sessions we will work closely and carefully through the text, at each step following up Maimonides' hints and challenges to his readers. Our goal will be not merely to appreciate the surface purport of the book, but also to discern its deeper implications, through which Maimonides sought to suggest, to a few of his readers, the secret meaning of the bible itself.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PHIL 1840 - SCIENCE AND RELIGION

Minimum Credits: 3
Maximum Credits: 3
Are science and religion at odds or harmonizable? Do they coincide or represent completely separate discourses? This course examines the
relationship between science, rationality, faith, and religion. Special attention will be given to ancient creation narratives and their interpretation, historical dialogues regarding faith and reason in the Western monotheist faiths (Christianity, Judaism, Islam), the scientific revolution, and various approaches to evolutionary theory. We will also consider practical, contemporary issues such as neuroscience and religious practice, ecology and faith, and scientific views toward gender and race.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: Any Other Philosophy Course

**PHIL 1890 - ISSUES IN PHILOSOPHY (VARIOUS)**

Minimum Credits: 3  
Maximum Credits: 3  
This intensive, advanced-level seminar is reserved for special philosophical topics that do not fit standard course-catalog categories. Issues discussed vary from year to year, but tend to be narrowly focused and specialized.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: Any Other Philosophy Course

**PHIL 1901 - INDEPENDENT STUDY--UNDERGRADUATE**

Minimum Credits: 1  
Maximum Credits: 9  
This course is a way of offering university credit in philosophy for relevant experiences or work undertaken independently, with little or no formal interaction with an instructor.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**PHIL 1902 - DIRECTED STUDY--UNDERGRADUATE**

Minimum Credits: 1  
Maximum Credits: 9  
This course provides an individualized study program, on a topic not covered in the regular curriculum, under the close supervision of a faculty advisor. The student is generally expected to produce a substantial piece of written work.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

**PHIL 1903 - DIRECTED RESEARCH--UNDERGRADUATE**

Minimum Credits: 1  
Maximum Credits: 9  
This course is a way of offering university credit in philosophy for research work undertaken by a student under the direction of a faculty member in connection with that faculty member's own research.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

**PHIL 1940 - HONORS THESIS/MAJORS**

Minimum Credits: 3  
Maximum Credits: 3
This is a special directed study for senior philosophy majors who wish to write an honors thesis over two terms. Use course PHIL 1941 for the second term.

**Academic Career:** Undergraduate
**Course Component:** Directed Studies
**Grade Component:** Letter Grade

**PHIL 1941 - HONORS THESIS 2/MAJORS**

Minimum Credits: 3  
Maximum Credits: 3  
This is the second term of course 1940.

**Academic Career:** Undergraduate
**Course Component:** Directed Studies
**Grade Component:** Letter Grade

**PHIL 1942 - HONORS THESIS 3/MAJORS**

Minimum Credits: 6  
Maximum Credits: 6  
This is a special directed study for senior philosophy majors who wish to write an honors thesis in one term.

**Academic Career:** Undergraduate
**Course Component:** Directed Studies
**Grade Component:** Letter Grade

**PHYS 0081 - SPACE AND TIME, LIGHT AND MATTER**

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces non-science students to the ideas of physics, with emphasis on modern physics.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis
**Course Requirements:**  
PREQ: MATH 0020 or any MATH greater than or equal to MATH 0031 (Min Grade ‘C’) or MATH PLACEMENT SCORE (61 or greater) or SAT Math (620 or greater) or ACT Math (27 or greater)

**PHYS 0082 - SCIENCE OF MUSICAL SOUNDS**

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students to the physical ideas underlying musical phenomena.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis
**Course Requirements:**  
PREQ: MATH 0020 or any MATH greater than or equal to MATH 0031 (Min Grade ‘C’) or MATH PLACEMENT SCORE (61 or greater) or SAT Math (620 or greater) or ACT Math (27 or greater)

**PHYS 0087 - PHYSICS AND SOCIETY**

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students to the physical ideas underlying the role of nuclear science in modern life.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis
**Course Requirements:** PREQ: MATH 0020 or any MATH greater than or equal to MATH 0031 (Min Grade 'C') or MATH PLACEMENT SCORE (61 or greater) or SAT Math (620 or greater) or ACT Math (27 or greater)

**PHYS 0088 - THE PHYSICS OF ENERGY**

Minimum Credits: 3  
Maximum Credits: 3  
This is an introductory course on energy. The course will describe both qualitatively and quantitively energy use, energy generation, and sources of energy. In this course, we will explore potential energy sources and the limitations of potential energy sources for specific practical applications. The course will also describe many of the basic physical considerations related to climate change as this phenomenon has now become intimately connected with energy use.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SU3 Elective Basis

**PHYS 0089 - PHYSICS AND SCIENCE FICTION**

Minimum Credits: 3  
Maximum Credits: 3  
This course looks at some of the physical ideas underlying stories by leading writers of science fiction.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0020 or any MATH greater than or equal to MATH 0031 (Min Grade 'C') or MATH PLACEMENT SCORE (61 or greater) or SAT Math (620 or greater) or ACT Math (27 or greater)

**PHYS 0091 - CONCEPTUAL PHYSICS**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0020 or MATH 0031 or greater (Min Grade 'C') or Math Placement Score 61 or greater

**PHYS 0110 - INTRODUCTION TO PHYSICS 1**

Minimum Credits: 3  
Maximum Credits: 3  
This is the first term of a two-term, algebra-based sequence in introductory physics. This term deals with mechanics, heat and thermodynamics, and waves.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: MATH 0020 or any MATH greater than or equal to MATH 0031 or SAT Math Score (620 or greater) or ACT Math Score (27 or greater)

**PHYS 0111 - INTRODUCTION TO PHYSICS 2**

Minimum Credits: 3  
Maximum Credits: 3  
This is the second term of a two-term, algebra-based sequence in introductory physics. This term deals with electricity and magnetism, optics, and modern physics.  
**Academic Career:** Undergraduate
PHYS 0174 - BASIC PHYSICS, SCIENCE AND ENGINEERING 1 (INTEGRATED)

Minimum Credits: 4
Maximum Credits: 4
The integrated curriculum version of PHYS 0104, the first part of a two-term sequence (0174-0175) introduces students to the basic principles of mechanics. An effort has been made to achieve a better integration of physics with the first term of calculus, engineering, and chemistry. The theory of waves and the kinetic theory of gases will be discussed.
Academic Career: Undergraduate

PHYS 0175 - BASIC PHYSICS, SCIENCE AND ENGINEERING 2 (INTEGRATED)

Minimum Credits: 4
Maximum Credits: 4
The integrated curriculum version of PHYS 0105, the second part of a two-term sequence (0174-0175), introduces students to the basic principles of physics. An effort has been made to achieve a better integration of physics with the first term of calculus, engineering, and chemistry. Modern physics (special relativity, elementary quantum mechanics, and atomic structure) will be discussed.
Academic Career: Undergraduate

PHYS 0212 - INTRODUCTION TO LABORATORY PHYSICS

Minimum Credits: 2
Maximum Credits: 2
This is an introductory physics laboratory associated with the physics 0110-0111 sequence.
Academic Career: Undergraduate

PHYS 0219 - BASIC LABORATORY PHYSICS SCIENCE AND ENGINEERING

Minimum Credits: 2
Maximum Credits: 2
This is an introductory physics laboratory associated with the physics 0104-0105-0106 sequence.
Academic Career: Undergraduate

PHYS 0310 - FIRST YEAR SEMINAR IN PHYSICS AND ASTRONOMY

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
PHYS 0410 - PHYSICS OF THE HUMAN BODY

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHYS 0411 - PHYSICS OF THE HUMAN BODY 2

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHYS 0475 - INTRODUCTION TO PHYSICS, SCIENCE AND ENGINEERING 1

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: MATH 0230 or 0235

PHYS 0476 - INTRODUCTION TO PHYSICS, SCIENCE AND ENGINEERING 2

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [PHYS 0174 (MIN GRADE 'B') or PHYS 0475 (MIN GRADE 'C')] and (MATH 0230 or 0235); CREQ: MATH 0240

PHYS 0477 - INTRODUCTION TO THERMAL PHYSICS, RELATIVITY AND QUANTUM MECHANICS

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHYS 0175 (B- or better) or PHYS 0476 (C or better)

PHYS 0479 - PRINCIPLES OF MODERN PHYSICS 1

2088
Minimum Credits: 3
Maximum Credits: 3
This is the first term of a two-term, intermediate level course in modern physics. This term deals with special relativity, molecular theory of gases, the development of quantum theory, and an introduction to quantum mechanics and its applications to atomic structure.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: [PHYS 0175 (MIN GRAD: 'C') or PHYS 0476 (MIN GRAD: 'C-')]; CREQ: MATH 0240

**PHYS 0481 - PRINCIPLES OF MODERN PHYSICS 2**

Minimum Credits: 3
Maximum Credits: 3
This is the second term of a two-term intermediate-level course in modern physics. This term deals with further applications of quantum mechanics to atoms, molecules, and solids, as well as an introduction to the physics of nuclei and particles.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: PHYS 0477 or 0479 MIN GRAD: 'C' for all listed Courses

**PHYS 0520 - MODERN PHYSICS MEASUREMENTS**

Minimum Credits: 3
Maximum Credits: 3
This honors laboratory course provides an introduction to the scientific questions and techniques in modern physical measurements, including exposure to various current experimental puzzles and accomplishments, hands-on experience with research grade equipment and microcomputer-controlled data acquisition interfaces, data analysis (and simple data analysis programs), prior preparation for data taking, and error estimation.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: PHYS 0477 or 0479 MIN GRAD: 'C' for all listed Courses

**PHYS 0525 - ANALOG AND DIGITAL ELECTRONICS**

Minimum Credits: 3
Maximum Credits: 3
A laboratory course designed to introduce the student to contemporary analog and digital electronics techniques used in basic science and engineering research. Topics include the study of measurement instruments, passive circuits, diode and transistor circuits, operational amplifiers and feedback, digital gates, analog to digital and digital to analog circuits. The course consists of a lecture and a lab.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: PHYS 0219 or 0520; MIN GRADE: 'C' for listed Courses

**PHYS 0679 - PRINCIPLES OF MODERN PHYSICS 1 WRITING**

Minimum Credits: 1
Maximum Credits: 1
This is a writing practicum to accompany physics 0479.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** CREQ: PHYS 0479; PLAN: Physics(BS) or Physics and Astronomy(BS, BA)
PHYS 1310 - UNDERGRADUATE SEMINAR

Minimum Credits: 1  
Maximum Credits: 1  
The undergraduate seminar provides a venue for students to discuss topics of interest in physics and astronomy. It gives students experience presenting research in the form of a poster presentation. The seminar will give the students a taste of what conducting scientific research and presenting scientific results is all about.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (PHYS 0477 or 0479) and (PHYS 0520 or 0525 or 1361 or 1426 or ASTRON 1263) or (PHYS 0219 and ASTRON greater than or equal to ASTRON 1120 or PHYS greater than or equal to PHYS 1321)  

PHYS 1311 - UNDERGRADUATE SEMINAR

Minimum Credits: 1  
Maximum Credits: 1  
The undergraduate seminar provides a venue for students to discuss topics of interest in physics and astronomy. It gives students experience presenting research, both as a short oral communication, and in the form of a poster presentation, in formats similar to conference talks and poster papers given by researchers in the field at topical meetings. The seminar will give the students a taste of what conducting scientific research, and presenting scientific results, is all about.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: PHYS 1310  

PHYS 1321 - COMPUTATIONAL METHODS IN PHYSICS

Minimum Credits: 3  
Maximum Credits: 3  
Students will master computational techniques and good programming practice and apply these skills to enhance their understanding of problems in physics and astronomy. The first 3 weeks of the course will introduce essential programming strategies and debugging techniques with the rest of the course devoted to applications. Topics include interpolation and approximation techniques, ordinary differential equations (e.g., projectile motion with drag and spin), oscillators (linear and nonlinear), orbits, data analysis/curve fitting, partial differential equations (e.g., fluid mechanics), and Fourier transforms.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** CREQ: (PHYS 0477 or 0479) and (PHYS 0219 or 0520 or CS 0008 or ENGR 0012) and MATH 0240 and (MATH 0290 or 1270)  

PHYS 1331 - MECHANICS

Minimum Credits: 3  
Maximum Credits: 3  
This is an intermediate-level course dealing with classical mechanics.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (PHYS 0175 or 0476) and MATH 0240 MIN GRAD: 'C' for listed Courses]; CREQ: (MATH 0280 or 1180 or 1185) and (MATH 0290 or 1270)  

PHYS 1341 - THERMODYNAMICS AND STATISTICAL MECHANICS
Minimum Credits: 3
Maximum Credits: 3
This course deals with the basic ideas of equilibrium thermodynamics and statistical mechanics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PHYS 0477 or 0479) and MATH 0240 and (MATH 0290 or 1270); MIN GRAD: 'C' for all listed Courses

PHYS 1351 - INTERMEDIATE ELECTRICITY AND MAGNETISM

Minimum Credits: 3
Maximum Credits: 3
This is an intermediate-level course in electricity and magnetism.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [(PHYS 0175 or 0476) and MATH 0240; MIN GRAD: 'C' for listed Courses]; CREQ: MATH 0290 or 1270

PHYS 1361 - WAVE MOTION AND OPTICS

Minimum Credits: 3
Maximum Credits: 3
This is an intermediate-level course dealing with wave motion and optics. Laboratory work is included as part of this course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PHYS 0219 or 0520) and MATH 0240(MIN GRAD: 'C'); CREQ: MATH 0280 or 1180 or 1185

PHYS 1370 - INTRODUCTION TO QUANTUM MECHANICS 1

Minimum Credits: 3
Maximum Credits: 3
This is the first-term of a two-term introduction to quantum mechanics. This term introduces the necessary formalism and treats some of its basic applications.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PHYS 0477 or PHYS 0479) and (MATH 0280 or 1180 or 1185); CREQ: PHYS 1331 and 1351; MIN GRAD: 'C' for all listed Courses except PHYS 0477

PHYS 1371 - INTRODUCTION TO QUANTUM MECHANICS 2

Minimum Credits: 3
Maximum Credits: 3
This is the second-term of a two-term introduction to quantum mechanics. The quantum formalism developed in the first term will be applied in a variety of physical situations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHYS 1370; MIN GRAD: 'C'

PHYS 1372 - ELECTROMAGNETIC THEORY
Minimum Credits: 3
Maximum Credits: 3
This is an advanced course in which Maxwell's equations are applied to a variety of electromagnetic phenomena.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PHYS 0477 or 0479) and 1351 and (MATH 0280 or 1180 or 1185); CREQ: PHYS 1331; MIN GRAD: 'C-' PHYS 1351 / MATH 0280, 1180, 1185

PHYS 1373 - MATHEMATICAL METHODS IN PHYSICS

Minimum Credits: 3
Maximum Credits: 3
This course deals with mathematical techniques that are commonly used in physics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: PHYS 1370

PHYS 1374 - SOLID STATE PHYSICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHYS 0477 or PHYS 0479 or CHEM 0710 or CHEM 1410

PHYS 1375 - FOUNDATIONS OF NANOSCIENCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PHYS 1376 - INTRODUCTION TO BIOLOGICAL PHYSICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PHYS 0111 or 0175 or 476) and [(MATH 0230 or 0235) or (MATH 0220 and STAT 1000)]

PHYS 1378 - INTRODUCTION TO NUCLEAR AND PARTICLE PHYSICS

Minimum Credits: 3
Maximum Credits: 3
This course gives an introduction into the theory concepts and the experimental methods used for nuclear and particle physics research. While some of the basic principles will be discussed from a historical perspective, the emphasis of this course is on modern developments, such as the standard model and the Higgs Boson, supersymmetry, extra dimensions, dark matter, CP-violation and baryogenesis, and neutrino oscillations. The main aspects of physics processes will be understood and calculated from symmetry principles and kinematics.
Academic Career: Undergraduate
PHYS 1415 - QUANTUM PHYSICS AT THE NANOSCALE

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: 1370

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

PHYS 1426 - MODERN PHYSICS LABORATORY

Minimum Credits: 2
Maximum Credits: 2
This is an advanced laboratory course that introduces students to the experimental techniques and equipment used in research laboratories.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PHYS 0525 and (0477 or 0479)

PHYS 1626 - MODERN PHYSICS LAB/WRIT PRAC

Minimum Credits: 1
Maximum Credits: 1
This is a writing practicum to accompany physics 1226.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: PHYS 1426 or ASTRON 1263; PLAN: Physics(BS) or Physics and Astronomy (BS, BA) or Astronomy (BA)

PHYS 1661 - WAVE MOTION AND OPTICS WRITING PRACTICUM

Minimum Credits: 1
Maximum Credits: 1
This is a writing practicum to accompany physics 1361.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: PHYS 0520 or 1361; PLAN: Physics(BS) or Physics and Astronomy(BS, BA)

PHYS 1900 - INTERNSHIP

Minimum Credits: 1
Maximum Credits: 9
This course places the student in an "on-the-job" setting in which they receive practical experience in a supervised training environment.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

PHYS 1901 - INDEPENDENT STUDY
Minimum Credits: 1
Maximum Credits: 9
This course gives students the opportunity to design and carry out an individual project not covered by any course offerings.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

PHYS 1902 - DIRECTED READING

Minimum Credits: 1
Maximum Credits: 9
This course is designed to give students the opportunity to design a plan of reading to be agreed upon by the student and a supervising faculty member.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

PHYS 1903 - DIRECTED RESEARCH

Minimum Credits: 1
Maximum Credits: 9
This course is designed to give students the opportunity to design and carry out a research project to be agreed upon by the student and a supervising faculty member.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

PHYS 1904 - EXPERIENCE IN UNDERGRADUATE TEACHING

Minimum Credits: 1
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

ASTRON 0086 - OBSERVATIONAL ASTRONOMY

Minimum Credits: 3
Maximum Credits: 3
This course is for students who have a desire to become familiar with the nature and motions of celestial objects in the night sky and techniques to observe them. The course will be given at a level suitable for both science and non-science majors who want to learn how to use a telescope and enjoy observational and practical astronomy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any MATH Course or MATH PLACEMENT SCORE (61 or Greater) or SAT HIMAT SCORE (620 or Greater) or ACT HIMAT SCORE (27 or Greater)

ASTRON 0087 - BASICS OF SPACE FLIGHT

Minimum Credits: 3
Maximum Credits: 3
Intended for non-science majors, this course focuses on identifying and understanding the general concepts associated with space flight.

Academic Career: Undergraduate
ASTRON 0088 - STONEHENGE TO HUBBLE

Minimum Credits: 3  
Maximum Credits: 3  
A course focusing on practical astronomy and providing a historical perspective of our place in the universe. Phenomena that can be readily observed with the unaided eye or a small telescope are discussed. The historical perspective starts with the earliest views, and discusses scientific discovery as a process leading up to modern ideas of the expanding universe of galaxies.

Academic Career: Undergraduate

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any MATH Course or MATH PLACEMENT SCORE (61 or Greater) or SAT HIMAT SCORE (620 or Greater) or ACT HIMAT SCORE (27 or Greater)

ASTRON 0089 - STARS, GALAXIES AND THE COSMOS

Minimum Credits: 3  
Maximum Credits: 3  
This course deals primarily with astronomical objects lying outside our solar system. The level is appropriate for non-science students.

Academic Career: Undergraduate

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: Any MATH Course or MATH PLACEMENT SCORE (61 or Greater) or SAT HIMAT SCORE (620 or Greater) or ACT HIMAT SCORE (27 or Greater)

ASTRON 0113 - INTRODUCTION TO ASTRONOMY

Minimum Credits: 3  
Maximum Credits: 3  
Topics covered include: size scales in the universe; some fundamental physics; telescopes; overview of phenomena in the solar system; stellar distances, motions, luminosities, and temperatures; the HI diagram, stellar interiors and energy generation; the formation of stars and evolution to their final stages (white dwarfs, neutron stars, and black holes); the ism; star clusters; the milky way galaxy; types of galaxies; the expansion of the universe; active galaxies and quasars; dark matter; galaxy formation and clustering; cosmology.

Academic Career: Undergraduate

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0020 or any MATH greater than or equal to MATH 0031 (Min Grade 'C') or MATH PLACEMENT SCORE (61 or greater)

ASTRON 0413 - HONORS INTRODUCTION TO ASTRONOMY

Minimum Credits: 4  
Maximum Credits: 4  
This course will be an introduction to astronomy and astrophysics. The 4-credit honors course will consists of all aspects of the 3-credit course, including lectures and homework with additional problems tailored for this course. ASTRON 0413 includes an additional 50-minute class session each week. In these extra sessions, basic topics will be covered in more detail than in ASTRON 0113. These extra sessions will also involve significant problem solving and discussions of the derivations of fundamental results in astronomy and astrophysics. Students considering a major in physics, astronomy, or physics and astronomy are strongly encouraged to take ASTRON 0413 instead of ASTRON 0113.

Academic Career: Undergraduate

Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (MATH 0230 or 0235) and (PHYS 0110 or 0174 or 0475)

ASTRON 1100 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ASTRON 1120 - STARS; STELLAR STRUCTURE AND EVOLUTION

Minimum Credits: 3
Maximum Credits: 3
Topics covered include: stellar properties (mass, radius, luminosity, temperature); deductions from binary stars; the sun; the HR diagram; stellar atmospheres and interiors; stars in hydrostatic and thermal equilibrium; equations of state for a perfect gas and for degenerate matter; energy generation and nuclear fusion reactions; opacities; life histories of stars according to mass; star formation; main sequence stars; red giants; white dwarfs; red supergiants; supernovae; neutron stars (pulsars); black holes; evolution of binary systems; results from clusters.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (ASTRON 0113 or 0413) and MATH 0240 and (MATH 1270 or MATH 0290 or MATH 0250); CREQ: PHYS 0477 or 0479

ASTRON 1121 - GALAXIES AND COSMOLOGY

Minimum Credits: 3
Maximum Credits: 3
Topics covered include: the milky way galaxy and its properties; external galaxies and their properties; evolution of galaxies; the expansion of the universe (Hubble Law) and the Extragalactic Distance Scale; Clustering of Galaxies; Dark Matter; Active Galaxies and Quasars (models with supermassive black holes); General Relativity, Cosmology, and the Big Bang Model; the Age and fate of the Universe; the History of the Early Universe (Inflation, Nucleosynthesis of Light Elements, 3 degree background radiation; the IgM and Galaxy Formation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (ASTRON 0113 or 0413) and MATH 0240 and (MATH 1270 or MATH 0290 or MATH 0250); CREQ: PHYS 0477 or 0479

ASTRON 1122 - THE SOLAR SYSTEM AND EXTRASOLAR PLANETS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

ASTRON 1263 - TECHNIQUES OF ASTRONOMY

Minimum Credits: 3
Maximum Credits: 3
The course will roughly be divided into three parts: (1) telescopes, instrumentation, and detectors for radio, IR/ optical/UV, X-Ray, and gamma-ray astronomy. (2) Theoretical foundations of observational techniques, (astronomical coordinates, data acquisition, and sources of noise), data processing, analysis techniques, statistics, and model fitting. (3) Practical problems in making observations, data processing, and data analysis, with special attention paid to understanding errors and uncertainties in results.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (ASTRON 0113 or 0413) and (PHYS 0175 or 0476) and (PHYS 0219 or 0520)

ASTRON 1900 - INTERNSHIP

Minimum Credits: 1
Maximum Credits: 9
This course places the student in an "on-the-job" setting in which they receive practical experience in a supervised training environment.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

ASTRON 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
This course gives students the opportunity to design and carry out an individual project not covered by any course offerings.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

ASTRON 1902 - DIRECTED READING

Minimum Credits: 1
Maximum Credits: 9
This course is designed to give students the opportunity to design a plan of reading to be agreed upon by the student and a supervising faculty member.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

ASTRON 1903 - DIRECTED RESEARCH

Minimum Credits: 1
Maximum Credits: 9
This course is designed to give students the opportunity to design and carry out a research project to be agreed upon by the student and a supervising faculty member.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

POLISH 0010 - ELEMENTARY POLISH 1

Minimum Credits: 3
Maximum Credits: 3
A traditional four-skills language course, with equal emphasis on speaking, reading, writing, and listening. By the end of the first semester, students have developed a good polish accent and the ability to converse on many practical subjects, including family, friends, work, studies, free time and lifestyle.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
POLISH 0020 - ELEMENTARY POLISH 2

Minimum Credits: 3
Maximum Credits: 3
A continuation of elementary POLISH 0010, this four-skill language course extends the grammatical coverage to include verbal aspect, numeral expressions, and the locative, dative and genitive cases. Emphasis continues to be on developing spoken language competence.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

POLISH 0030 - INTERMEDIATE POLISH 3

Minimum Credits: 3
Maximum Credits: 3
The continuation of elementary POLISH 0020, this course focuses more on written polish and developing listening comprehension than in the first-year course. Attention is paid to developing a good control of basic idioms, and to the formation of participles.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

POLISH 0040 - INTERMEDIATE POLISH 4

Minimum Credits: 3
Maximum Credits: 3
A continuation of intermediate POLISH 7030, this course attempts to round out the student's basic oral competence in relation to specific matters of polish culture and reality. For many students, this course is preparatory to summer study in Poland.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

POLISH 0210 - INTENSIVE BEGINNING POLISH

Minimum Credits: 6
Maximum Credits: 6
This is a four-skill intensive course in beginning Polish language which is to be offered as part of the summer intensive workshops in Slavic languages.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

POLISH 0211 - BEGINNING INTENSIVE POLISH PITT/POLAND

Minimum Credits: 10
Maximum Credits: 10
This is a first-year polish course equivalent to POLISH 0210. Four weeks on campus and four weeks in class in Poland. Part of the East European summer language institute.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

POLISH 0212 - BEGINNING INTENSIVE POLISH IN POLAND
Minimum Credits: 4
Maximum Credits: 4
This is a first year second semester course equivalent to POLISH 0020. It is taught in Łódź Poland and is part of the East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

POLISH 0220 - INTENSIVE INTERMEDIATE POLISH

Minimum Credits: 6
Maximum Credits: 6
This is a four-skill intensive course in intermediate Polish which is offered as part of the summer intensive workshops in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

POLISH 0221 - INTERMEDIATE INTENSIVE POLISH PITT/Poland

Minimum Credits: 10
Maximum Credits: 10
This is a second-year course in Polish equivalent to POLISH 0210. Four weeks on campus and four weeks in class in Poland. Part of the East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

POLISH 0222 - INTERMEDIATE INTENSIVE POLISH IN POLAND

Minimum Credits: 4
Maximum Credits: 4
This is a second year second semester course equivalent to POLISH 0040. It is taught in Łódź Poland and is part of the East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

POLISH 0223 - INTERMEDIATE POLISH IN POLAND

Minimum Credits: 6
Maximum Credits: 6
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

POLISH 0230 - ADVANCED INTENSIVE POLISH

Minimum Credits: 4
Maximum Credits: 4
This is a four-skill intensive course in advanced Polish, which is offered as part of the summer intensive workshops.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
POLISH 0233 - ADVANCED POLISH IN POLAND

Minimum Credits: 6
Maximum Credits: 6
This is an advanced-level four-skills Polish language course held in Krakow, Poland, and is part of the Slavic, East European and near eastern summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

POLISH 0325 - SHORT STORY IN POLISH CONTEXT

Minimum Credits: 3
Maximum Credits: 3
An introduction to the formal analysis of the literary genre of the short story, on the example of works of polish literature of the 19th and 20th centuries. The course will examine works both formally and as they reflect the reality or literary-social concerns of given historical periods 19th century positivism, women's issues, prison-camp literature, post-war literature of the absurd, and others.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

POLISH 0400 - ADVANCED POLISH THROUGH FILM

Minimum Credits: 3
Maximum Credits: 3
A two-semester sequence in polish advanced conversation, reading, and composition. This course aims at developing the student's command of idioms, while thoroughly reviewing all aspects of polish conjugation and declension. Focus is placed on the contemporary colloquial Polish language, as spoken by the young in authentic Polish cultural contexts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

POLISH 0410 - ADVANCED POLISH 2

Minimum Credits: 3
Maximum Credits: 3
This is the second part of third-year Polish language. (Advanced level).
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

POLISH 0870 - CONTEMPORARY POLISH CINEMA:LITERATURE ON FILM

Minimum Credits: 3
Maximum Credits: 3
This course presents contemporary Polish cinema from 1945 to the present. Concepts will be studied in their historical, political, philosophical, and aesthetic perspective. The main trends (schools, movements) in Polish cinema, such as the so-called Polish school and the cinema of moral concern, and the works of most important modern polish filmmakers will be examined.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

POLISH 1260 - SURVEY OF POLISH LITERATURE AND CULTURE
Minimum Credits: 3
Maximum Credits: 3
Major literary monuments of Polish literature are examined against the background of Polish history and culture. Works are related to the major literary and intellectual currents of the time and are placed in both a Polish and a general European context. Literary works are additionally examined critically from a formalistic literary point of view, the aim being to develop in students the basic concepts and vocabulary of literary criticism.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

POLISH 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
This course allows students to work independently on individually designed projects.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

PS 0200 - AMERICAN POLITICS

Minimum Credits: 3
Maximum Credits: 3
This course is, quite generally, designed to provide students with a basic working knowledge of the basic goals of the constitutional framers, giving students an understanding of the purposes of the American political system; the essential structures (or institutions) within the American political system, the behavior (broadly defined) of the actors within the American political system, the purpose and performance of the linkage institutions in the United States (possibly including political parties, elections, and interest groups); and the types of policies that are often produced by a system with the characteristics of those found in the United States. Depending on the interests, area of expertise, and inclinations of the particular instructor, some of these may be emphasized more heavily than others.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 0300 - COMPARATIVE POLITICS

Minimum Credits: 3
Maximum Credits: 3
This course provides students with basic information about a range of political systems outside the United States and teaches them to use that information to examine major theories about politics. The course is also designed to help students understand the government and the politics of the United States in comparative perspective and to develop some understanding of comparative methodology and the logic of comparison as a social science method. Depending on the interests, area of expertise, and inclinations of the particular instructor, some regions and topics might be emphasized more heavily than others.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 0500 - INTERNATIONAL RELATIONS

Minimum Credits: 3
Maximum Credits: 3
This course aims to increase students' knowledge of the history of the modern state system and, in particular, political developments during the past few decades. It introduces students to basic concepts and analytic frameworks that political scientists employ to understand world politics, enhancing students' knowledge of international institutions that play important roles in world politics and exploring current issues in world affairs relating to human welfare and security. Depending on the interests, area of expertise, and inclinations of the particular instructor, some of these may be emphasized more heavily than others.
PS 0550 - INTRODUCTION TO GLOBAL STUDIES

Minimum Credits: 3  
Maximum Credits: 3  
This course will introduce students at the freshman and sophomore levels to international studies and to a global perspective. It will be an openly interdisciplinary course and will use the case study methodology to cover issues of global environmental sciences, world politics and language, using history and culture as a guide.

PS 0600 - POLITICAL THEORY

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to introduce students to the idea of normative political theory and to important authors and concepts in the western political theory tradition. Students will learn to understand both historical and contemporary debates surrounding important political concepts such as authority, justice, liberty, and democracy, and to appreciate the differences among normative, empirical, logical, and faith-based political claims. Students will learn to read critically and analytically, to make simple normative arguments, and to explain the specific role of normative arguments in political science and political life. Depending on the interests, area of expertise, and inclinations of the particular instructor, some of these may be emphasized more heavily than others.

PS 0700 - RESEARCH METHODS IN POLITICAL SCIENCE

Minimum Credits: 3  
Maximum Credits: 3  
The course provides an introduction to scientific inquiry applied to the study of politics. The main emphasis of this course is to introduce political science majors to key analytical concepts and to their application to the study of politics. The course covers the logic of scientific inquiry, research design, and quantitative methods.

PS 1000 - HONORS THESIS-MAJORS

Minimum Credits: 3  
Maximum Credits: 3  
Students prepare a thesis, under guidance of a faculty advisor, which is read and evaluated by a committee of three faculty members.

PS 1201 - CONSTITUTION AND CIVIL LIBERTIES

Minimum Credits: 3  
Maximum Credits: 3  
The course will explore major topics in the area of civil liberties and civil rights which have concerned the Supreme Court in recent years and which...
have provoked extensive political and social controversy. Examples include decisions about discrimination, privacy, freedom of speech and assembly, and conflicts between freedom of the press and a fair trial.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1202 - AMERICAN CONSTITUTIONAL LAW**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The United States constitution plays an extraordinarily powerful role in American political life. The primary focus of this course is examination of the role of constitutional law in the American political process. We do this by analyzing constitutional interpretation by the United States Supreme Court and other federal courts in its major decisions. Students will learn how the court reached its decisions, who some significant justices have been, how the court considered contending arguments, and what the consequences of these decisions for our political system have been. Topics include the development of judicial review and close analysis of the way in which the court has addressed the two major structural features of the U.S. Constitution: separation of powers and federalism in an historic and contemporary setting. Specific issues in these areas are struggles over presidential and congressional power and national versus state power. We also address issues regarding civil liberties and civil rights. Students should find this course helpful in reaching a more sophisticated understanding of the major issues of constitutional law in American life, as well as providing a useful background to the cases and kinds of legal analysis they may pursue in further study in law school or other graduate study.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1203 - JUDICIAL POLITICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course will focus on judicial policy making and the political, social and economic underpinnings influencing cases and their decisions. Areas of focus will be: right of privacy (sexual orientation and abortion), classification (race and gender), speech (freedom of speech and press and the internet), religion (exercise and establishment), and criminal (investigations, trials and punishment).

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: PS 0200

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**PS 1204 - WOMEN IN POLITICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will consider political issues and explore the changing political role of women as citizens, candidates, office-holders, and policymakers. The emphasis will be on the American political experience, although examples will be drawn from other countries.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1205 - RACE, GENDER AND POLITICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course deals with the political consequences of ethnic identity in the advanced industrial states of North America and Western Europe. The major theoretical concerns include the sources of ethnic identity, the relationship between ethnicity and social class, and the persistence or resurgence of ethnic political movements in contemporary societies.

**Academic Career:** Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1211 - LEGISLATIVE PROCESS**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
This course provides an analysis of the legislative process in modern democracies with primary attention devoted to the legislative process in the United States. The history and meaning of representation is analyzed as is the behavior of participants in the legislative process. The impact of social-economic forces on decision-making in the United States is studied as are the roles of interest groups, political parties, the executive branch, and the judiciary.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1212 - AMERICAN PRESIDENCY**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
This course provides an analysis of presidential leadership in the United States. The first part of the course deals with factors helping to explain presidential leadership; how presidents are nominated and elected, the constitutional framework within which the presidency operates, presidential relations with the bureaucracy, and presidential personality. This framework is then used for an intensive analysis of presidential leadership in foreign and domestic policy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1213 - LAW AND POLITICS**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
Examines the relationship between law and values, law and power, and law and discretion. Legal reasoning is examined as applied to statutory, case, and constitutional law.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1214 - US CONGRESS**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
This course will explore the evolution and current place of the U.S. Congress within the American political system beginning with an examination of the theory and history of electing representatives to government. Students will examine the role and structure of the legislative branch as anticipated in the American constitution. Other areas of focus include the congressional election process, the importance of congressional committees and differences in rules for the house and senate, policy making, and how congress relates to the other two branches of government. A key overarching goal in this course is to assess challenges and changes facing the contemporary U.S. Congress.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

**PS 1230 - INTEREST GROUP POLITICS**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
Are interest groups vital or vicious? Do interest groups use money to ‘buy power,' or do they play a key part in the representation of diverse ideas? What roles do, and should, interest groups (i.e., Special interests, pressure groups, lobbyists) play in democracies? This course explores the role of interest groups in the participation and representation of citizens in the United States. Focusing on key themes like liberty and equality, the course examines what interest groups are, what they do, and what implications that has for the laws that get passed and enforced, political campaigns, the ability of different groups (that differ by race/ethnicity, income, religion, and sexual preference) to get their voices heard in the political process, and what could be done to improve or curb their influence.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1231 - POLITICAL PARTIES AND ELECTIONS**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the organization and character of American political parties, the impact of environmental factors on party processes and behavior, patterns of party competition, and the role of parties in shaping public policy and in providing a linkage between public and government. Attention is also given to the political behavior of the American public. Recent changes in the organization of party institutions are examined.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1232 - POLITICAL ATTITUDE & PUBLIC OPIN**

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the formation and measurement of mass public opinion. Topics include: how individuals gather information; the formation of political ideology, political attitudes, and political preferences; the stability of public opinions across different issues; the relationship between mass public opinion and government policy (both what it is, and what it should be); and methods for measuring public opinion, including public opinion surveys.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1233 - POLITICAL PSYCHOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
There are numerous ways that we can explain political behavior (including both overt behavior such as voting and latent behaviors such as attitudes and preferences). In this course, we consider a number of such explanations (all from the discipline of psychology), including those rooted in personality, biology, emotions, culture, and environmental influence.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1234 - ELECTORAL BEHAVIORS AND DEMOCRATIC PROCESS**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the factors that affect national electoral outcomes in the U.S.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1235 - MEDIA AND POLITICS**
The media is all around us, but what impact does it have? It permeates everything from leisure and entertainment to how candidates communicate with the public and what political decisions get made. This course tackles three broad questions about the intersection of media and politics. First, how is news created and why does it matter? For example, are late night talk shows like Stephen Colbert or the internet news sources; why or why not? Second, how is the media used in political campaigns and how does it influence campaigns? Can a bad tweet (i.e. Anthony Weiner) end a campaign or a political career? Third, how do the media shape the creation of public policies ‘the laws that do or do not get passed’ and the decisions that get made? Can media-savvy politicians use the media to help their cause or rally public support for big decisions like going to war?

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1240 - THE POLITICS OF DIVERSITY**

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the benefits and pitfalls of diversity both in American national politics and the politics of everyday life. Students will read and discuss some of the top research on questions surrounding diversity and will conduct original research on the topic. Students will also learn valuable skills they will be able to bring to bear as they enter today's diverse workplaces.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1241 - PUBLIC ADMINISTRATION AND POLITICAL SYSTEM**

Minimum Credits: 3  
Maximum Credits: 3  
This course analyses the nature of the public bureaucracy in the United States and its role in governance. Special emphasis is placed on questions of accountability and responsibility.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1250 - GAMES, POLITICS, AND STRATEGY**

Minimum Credits: 3  
Maximum Credits: 3  
How can we better understand politics by viewing it as a game of strategy? What can we really say about the "will of the majority"? Can democratic procedures be manipulated? How is conflict like a game of poker? Campaigns, elections, persuasion, lobbying, conflict, and war involve elements of competition, cooperation, and chance. The course develops analytical tools that can be applied to a variety of political phenomena. Learn how to model and analyze strategic interaction by playing classroom games and applying tools from game theory.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1251 - URBAN GOVERNMENT AND POLITICS**

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to the key structures, procedures and problems of cities and urban areas. Topics covered include: city-suburban conflicts, relations between cities and the federal government, forms of local government and their advantages and disadvantages, property taxes, housing, urban renewal, crime, courts, and education. The principal objective of the course is to help the student develop a well-informed and differentiated view of urban places and problems.  
**Academic Career:** Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1252 - STATE GOVERNMENT**

Minimum Credits: 3  
Maximum Credits: 3  
This course will survey political processes and public policy outcomes in the fifty American states. Policy areas to be covered include the environment, era, taxation, crime and law enforcement, and welfare.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1261 - AMERICAN PUBLIC POLICY**

Minimum Credits: 3  
Maximum Credits: 3  
This course will focus on a variety of public policy issues. The issues include social welfare programs, management of the economy, governmental regulation of business activities, environmental programs, urban problems, civil rights, civil liberties, crime control efforts, and foreign policy.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1262 - HEALTH POLICY IN UNITED STATES**

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to current problems of health care and health policy in the United States. Description and analysis of the proposals, current practices, and the reactions of interest groups will be the central theme of the course.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1264 - AMERICAN POLITICS THROUGH FILM**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**PS 1275 - RELIGION AND AMERICAN POLITICS**

Minimum Credits: 3  
Maximum Credits: 3  
In recent years religious groups and religious values have played an increasingly prominent role in politics in many countries, including the United States. The purpose of this course will be to consider the public and political aspects of religion in the United States. Religious beliefs and institutions have wide-ranging implications for civic norms, public policy, political leadership, international relations, and the treatment of various social groups. After an historical survey of the role of religion in American politics, the second part of the course will focus on the contemporary impact of American religious groups and values on public opinion, lobbying, and electoral choice. We will also discuss the implications of the doctrine of "separation of church and state" for law, education, and civil liberties.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
PS 1281 - CAPSTONE SEMINAR IN AMERICAN POLITICS

Minimum Credits: 3
Maximum Credits: 3
Capstones are writing intensive courses for senior, PS majors. Subject matter will vary from term to term depending on the interests, area of expertise, and inclinations of the particular instructor.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: PS 0200; PLAN: Political Science (BA or BS or BPH); LVL:Sr

PS 1283 - TOPICS IN AMERICAN POLITICS

Minimum Credits: 3
Maximum Credits: 3
Current topics of interest in American politics. Topics covered vary with instructor and term.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1300 - CAPSTONE IN RUSSIAN AND EAST EUROPEAN STUDIES

Minimum Credits: 3
Maximum Credits: 3
The objective of this capstone course in Russia and east European studies is to provide you with the opportunity to draw on and synthesize all of the skills and knowledge gained in the various courses and seminars that you have taken in the process of earning your REES certificate, and apply them to a topic of particular interest to you. The course will culminate in an analytical/research paper on a topic in Russian and east European studies to be chosen by each individual student. In keeping with multidisciplinary objectives of our certificate, the paper must draw on methodologies and literature from multiple disciplines.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

PS 1301 - COMPETING PERSPECTIVES ON GLOBAL ENERGY: FROM WESTERN PA TO EASTERN EUROPE

Minimum Credits: 3
Maximum Credits: 3
This course provides professional school students in the fields of business, law, engineering, public policy and other areas with a first-hand experience of the global impact of contemporary developments in the natural gas and other energy sectors. Participants will first witness the effect that Marcellus Shale has had in Western PA and then see how these developments are impacting the US's foreign policy and trade practices. After this, students will be familiarized with a very different side of the global natural gas and energy equation by travelling to Moscow, where they will see the Kremlin's view of global and regional gas and energy markets. The course ends with an exploration of the role that transit states like Bulgaria play in global energy markets and efforts by these players to use their territory and energy alternatives to bargain with larger states at both ends of energy pipelines. Throughout this exploration, students will be exposed to a variety of stakeholders and a gain an understanding of energy's impact on domestic and international politics, economies, societies and the environment.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
PS 1302 - POLITICAL DEVELOPMENT

Minimum Credits: 3  
Maximum Credits: 3  
This course will examine the major problems involved in the study and understanding of change in "less developed countries," the main approaches and theories applied to these problems, and the criticisms directed at some of these approaches. In particular, it will consider attempts to understand "development" by reference to the earlier experiences of Europe and the United States and will evaluate the relevance of such an approach to the current problems of the underdeveloped world.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PS 1303 - EACE MOVEMENTS AND PEACE EDUCATION

Minimum Credits: 3  
Maximum Credits: 3  
This course focuses on two major components in the field of peace studies; peace movements and peace education. Key concepts (e.g., peace, war, violence, conflict, justice, equality, democracy, and citizenship) and theories are discussed. Movements for (inter-personal, inter-group, and international) peace initiated by people in the United States and other countries historically and today will be analyzed. School-, University-, and community-based peace education programs developed in various countries will also be examined.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PS 1311 - WESTERN EUROPEAN GOVERNMENT AND POLITICS

Minimum Credits: 3  
Maximum Credits: 3  
This course covers the politics and government of Western European countries at the national and local levels. It also considers some aspects of the relationships between the European Union and its member states.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PS 1314 - GERMAN GOVERNMENT AND POLITICS

Minimum Credits: 3  
Maximum Credits: 3  
This course examines political institutions and developments in Germany following the second World War, first tracing them through the eras of postwar occupation, Cold War partition and consolidation of the two German states, through the East German revolution of 1989 that set the state for unification. The course will pay special attention to the domestic and international public policy challenges facing post-unification Germany.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PS 1316 - ASIAN POLITICS

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students to the politics of Asia by examining and comparing the political systems, economic performance, civil society, and the effect of globalization among countries of East and southeast Asia.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
PS 1317 - POLITICAL OF THE EUROPEAN UNION

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce students to the European community. It will provide a historical overview of the immediate post-war period and introduce students to the community's four major governing institutions. It also considers the single European act and its significance and explores the role of the "big four" countries within the community.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1318 - EUROPEAN GOVERNMENT AND POLITICS

Minimum Credits: 3
Maximum Credits: 3
This course will encompass the comparative study of the political systems of Western Europe including the UK, France, Germany, Italy, Spain, Poland, and Scandinavia. The primary themes will include political development and institutions, security, European integration, political culture, political economy, and democratization.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1321 - LATIN AMERICAN POLITICS

Minimum Credits: 3
Maximum Credits: 3
This course compares and contrasts the governments and political processes throughout Latin America. It offers a detailed look at several countries, and also provides a comparative framework to discuss the rise, fall, and quality of democracy.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1322 - LATIN AMERICAN POLITICAL DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
In this course we will address the following puzzle: why was it so difficult to build stable democracies in Latin America during the twentieth century? We will use the analytical tools provided by political science to illuminate the political history and the current situation of Latin America. Some of the topics that we will deal with in this course are: institutional arrangements, economic policy, and role of the military, elections, and political and social equality. Most of the course we will focus on thematic material using comparative analysis. However, we will also study four Latin American countries in greater detail.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1324 - US-LATIN AMERICAN RELATIONS

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the history, politics, and legitimacy of US policy towards Latin America. How have these relations changed over time? What have been the consequences for the US or for the Latin American countries? What interests and structures have driven us decisions?
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
PS 1326 - EAST ASIAN POLITICAL ECONOMY 1950-PRESENT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1327 - POLITICS OF REVOLUTION

Minimum Credits: 3
Maximum Credits: 3
Politics is often about conflict, but sometimes that conflict takes place within legislative bodies and other times in the streets. Most of what we study in political science courses focuses on conflict within the electoral framework, but this course asks what happens when citizens take conflict into their own hands. This course will examine the conditions that prompt people to organize on behalf of their collective interests, how protest movements evolve, and under what conditions they succeed. The first half of the class will cover theoretical topics: the causes, strategies, and consequences of protest activity. The second half of the class will focus on types of protest (political protests, revolutionary movements, social movements, riots, and guerrillas) through comparative case studies. Most case studies in class will be based on examples within the Western hemisphere (North, central, South America, and the Caribbean) - a geographical region with an enormous variety of types, causes, and consequences of protest movements - but students will be encouraged to become independently familiar with protest movements around the world.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1328 - AUTHORITARIAN STATECRAFT AND THE ARTS OF RESISTANCE

Minimum Credits: 3
Maximum Credits: 3
According to the democracy index, only 19 countries are "full democracies," housing only 13% of the world's population. Countries like Japan and the United States are considered "flawed democracies" while the majority of the world's political systems are either "hybrid" or "authoritarian." Therefore, if we want to truly understand politics, it is essential that we understand politics in non-democracies, or political systems conventionally referred to as "authoritarian regimes." This course invites students to think critically about the nature of authoritarian political systems. We will examine how society and politics are organized in authoritarian systems and how individuals experience power and authority in these societies: historical and contemporary.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1330 - EUROPEAN UNION SEMINAR

Minimum Credits: 3
Maximum Credits: 3
This course will focus on various topics related to the European Union. Students will have the opportunity to engage in an individual or group research project on a topic of their choosing related to the EU/Europe.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

PS 1331 - GOVERNMENT AND POLITICS OF SOUTHEAST ASIA

Minimum Credits: 3
Maximum Credits: 3
This course will offer an introduction to the contemporary politics of the nations of Southeast Asia; Thailand, Malaysia, Singapore, Indonesia, the Philippines, Burma, Vietnam, Laos and Kampuchea. An overview of colonial rule, the rise of nationalism and the struggle for independence will set
the background for the study of the current political scene.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1332 - GOVERNMENT AND POLITICS IN CONTEMPORARY CHINA**

Minimum Credits: 3  
Maximum Credits: 3  
An introductory analysis of contemporary Chinese politics. Topics to be considered include the traditional background, the Chinese revolution, the role of revolutionary ideas and institutions in Chinese political life since 1949, recent and current policy issues, and possible future trends.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1333 - GOVERNMENT AND POLITICS OF JAPAN**

Minimum Credits: 3  
Maximum Credits: 3  
This course considers postwar Japanese government and politics in comparative perspective. Topics to be covered include the following: the American occupation, Japanese society, political culture, election system and election campaigns, government and political leadership, the ruling party, opposition parties, protest movements, the parliamentary and policymaking processes. Frequent comparisons will be made between the Japanese system and other democratic systems in North America and Europe.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1334 - COMPARATIVE POLITICS THROUGH FILM**

Minimum Credits: 3  
Maximum Credits: 3  
This course analyzes the political aspects of film in a variety of national cinemas (US, Latin American, European, African, Asian), across different decades and genres (including documentary, period epic, Western, and melodrama), and through a range of themes (including macro-themes like war, colonialism, revolution, and ideological and political conflict as well as micro-themes like race, gender, sexuality, and the nuclear family).  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1336 - BUSINESS AND POLITICAL ECONOMY IN MODERN CHINA**

Minimum Credits: 3  
Maximum Credits: 3  
The program will focus on how contemporary China handles conflict and opportunity between its culture and tradition on the one hand, and modernization and Western influence on the other.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**PS 1338 - POLITICS IN DEVELOPING COUNTRIES**

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the question of why it is so hard for many under-developed countries to overcome persistent problems of poverty, bad governance, and civil conflict. We will explore the politics of under-development, looking at the role of geography, institutions, historical legacies of
slavery and colonialism, corruption, natural resources, ethnic divisions, and international aid. The course will take us to virtually every part of the globe, from Africa to Latin America to Asia to Europe and the United States.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1339 - SCIENCE AND PUBLIC POLICY IN THE US AND EUROPE**

**Minimum Credits:** 3  
**Maximum Credits:** 3

Public policy influences almost every aspect of our daily lives, from the food we eat, the air we breathe, to the products we buy. In this class, we compare the public policy process in the US and the EU on important and current public policy debates. We examine a range of science-related topics that, depending on the semester, include the following: genetic modified organisms, the use of pesticides in agriculture, food labeling, climate change, etc. This class is open to students from all majors, and may be of particular interest to pre-health students, stem students, as well as political science majors and students completing certificates from the European union studies center.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1341 - GOVERNMENT AND POLITICS USSR/RUSSIAN FEDERATION**

**Minimum Credits:** 3  
**Maximum Credits:** 3

A survey of the political systems in the USSR (1917-1991) and its major successor, the Russian Federation (1991-present). The first section deals with the period from the Bolshevik Revolution in 1917 until the mid-1980s. The second section examines the efforts to reform the political system under general Secretary Gorbachev. The final section deals with the collapse of the USSR in 1991 and the subsequent development of the Russian Federation as an independent state.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1342 - GOVERNMENT AND POLITICS OF EASTERN EUROPE**

**Minimum Credits:** 3  
**Maximum Credits:** 3

The politics of Eastern Europe has been shaped by the traditional culture, by the establishment of communist regimes, by the superimposition of Stalinism, and by the search for non-Stalinist alternatives to the process and structure of governing. In this course the nature of contemporary politics in eastern Europe is described and analyzed in the context of the above social and political forces.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1345 - POLITICS OF OCEANIA**

**Minimum Credits:** 3  
**Maximum Credits:** 3

This course examines the government and politics of Australia and Australian engagement in the Asia-Pacific region. It does so by surveying similarities with and differences from the North American democratic model and by examining Australia's substantial and abiding interests in the Asia-Pacific region. By the end of course, students will be aware of the importance of geographical distance and location in the australian story. Students will also be aware of the continuing importance of cultural and political inheritance in the development of Australian public and foreign policy. Students will be encouraged to make comparisons with the US system of government and politics.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade
PS 1346 - POLITICAL EAST EUROPE

Minimum Credits: 3
Maximum Credits: 3
The lives and times of the people and states of "the lands between" of eastern Europe are examined in terms of three forces that have shaped their contemporary cultures, their chronic and multi-dimensional "between-ness" on the political and cultural map of Europe, and the influence of a succession of modern ideologies (from nationalism and liberalism to fascism and communism) on their institutions and behavior.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1348 - XENOPHOBIA IN MODERN EUROPE

Minimum Credits: 3
Maximum Credits: 3
This course will examine Europe's post-war xenophobic, racist and exclusionary policies. We will use memoirs, photo journalism, film and interviews to understand recent discrimination against refugees, guest workers, Jews, linguistic and religious minorities. We will also put the question into scholarly context, as we examine how historians, sociologists, psychologists and anthropologists try to understand the way in which Europeans construct the categories of "us" and the "others".
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1349 - TRANSATLANTIC GOVERNANCE AND POLICY

Minimum Credits: 3
Maximum Credits: 3
The economic, political and defense links between North American countries and European countries, and especially the European Union, generate important governance and policy issues. This course examines those issues in light of general theories of governance at the national and international levels. Special attention will be given to on-going trade negotiations and climate change policy.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

PS 1351 - GOVERNMENT AND POLITICS OF THE MIDDLE EAST

Minimum Credits: 3
Maximum Credits: 3
A survey of the developing political systems of the Middle East and their positions in world affairs. Considered are the growth of political institutions in the modern era, the nature of political leadership, the evolution of political attitudes, and the legacy of Western and Soviet imperialisms. The states dealt with are Iran, turkey, Iraq, Lebanon, Jordan, Syria, Egypt, and Israel. The course includes a diplomatic simulation exercise designed to illustrate the complexity of foreign policy interactions in the region.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1352 - INTRODUCTION TO AFRICAN POLITICS

Minimum Credits: 3
Maximum Credits: 3
A general introduction to African politics at macro level for freshmen and sophomores with special focus on traditional African political system, European imperialism in Africa, African nationalism, independence and post-independence problems of nation-building and economic development.
Academic Career: Undergraduate
PS 1357 - THE POLITICS OF FOOD, LAND, AND SUSTAINABILITY

Minimum Credits: 3
Maximum Credits: 3
The debates surrounding food and agricultural land are often seen as scientific and outside the realm of social scientists. Yet many of the key decisions regarding food production, distribution, and consumption are decidedly political. This course provides students with the concepts and theories necessary for understanding and analyzing the various policies and proposals put forth by food producers, consumer groups, politicians, government regulators, and other food-related interest groups. This course is based on the premise that rational and desirable policy goals for any society are to create and maintain food systems that promote health, protect the environment, are sustainable, and support the livelihoods of participants, but that powerful forces in society including large businesses seeking profits and school boards protecting budgets may oppose this premise in theory or practice. Hence: politics. The course considers how the U.S. and other governments develop policies aimed at ensuring a sufficient, nutritionally adequate, safe, affordable, and sustainable food supply. Drawing on contemporary case studies, it examines: why and how governments establish food and nutrition policies; how stakeholders in the food system use the political system to influence policy; the cultural, social, economic, and political factors that influence stakeholder and government positions on policy issues.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1358 - AFRICAN INTERNATIONAL RELATIONS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1359 - EU INTERNATIONAL LAW PERSPECTIVE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1361 - COMPARATIVE POLITICAL PARTY SYSTEMS

Minimum Credits: 3
Maximum Credits: 3
This course compares the political party systems, electoral processes, and other institutions of governance in four or more countries, which vary by instructor and term.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1363 - GLOBALIZATION AND LAW

Minimum Credits: 3
Maximum Credits: 3
This course considers the efforts underway to globalize ideas of rule of law. In the movement to promote rule of law governments, human rights, and market economics, conflicts over culture, identity and local politics arise. The course examines how legal institutions emerge and diffuse within diverse social and political settings (Europe, the Americas, East Asia, the Middle East and Africa), the relationship between the rule of law and
Climate change is one of the most difficult problems faced by humankind. We are all causing and suffering from it to varying degrees. As a result, some have labeled it a “super wicked problem.” The politics underlying climate change are complex and therefore particularly interesting. In the first part of this course, we will analyze what policymaking really is: how does it work? How are policies designed? Where is policymaking the most effective? In the second part, we will study the determinants of climate policy in Europe and elsewhere. Specifically, we will investigate the role played by public opinion, political leaders, bureaucracies, scientists, and interest groups. The last part of this course evaluates the effectiveness of actual policies designed to solve climate change. We will examine a broad range of policies ranging from carbon taxes to technology transfers.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

Minimum Credits: 3
Maximum Credits: 3

This one-credit optional discussion course will allow students to discuss issues from PS 1324, US-Latin American relations, in Spanish. As such, it will discuss both historical and contemporary issues, but the discussion will emphasize current events.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

This course discusses religion and politics, especially in its contemporary dimensions. Taking a comparative focus that will change from term to term...
PS 1378 - BUILDING DEMOCRACY AROUND THE WORLD

Minimum Credits: 3
Maximum Credits: 3
Developing a new democracy is a process, with at least two main parts. First the country must move away from authoritarian rule. The first part of the course, therefore, will examine why (or why not) countries make that transition and how they do so. The second part of the course will then examine why some countries are more successful in their transition, based on an examination of civil society and the types of political institutions (such as political parties, the executive system, and the judiciary) that countries develop. What influences these choices and how do these choices affect success and stability of the new democracy? Has international aid been successful in helping countries develop democratic practices?

PS 1381 - CAPSTONE SEMINAR IN COMPARATIVE POLITICS

Minimum Credits: 3
Maximum Credits: 3
Capstones are writing intensive courses for senior, PS majors. Subject matter will vary from term to term depending on the interests, area of expertise, and inclinations of the particular instructor.

PS 1383 - POLITICS OF CONTEMPORARY MIDDLE EAST

Minimum Credits: 3
Maximum Credits: 3
The main emphasis of the course will be on conflict and conflict resolution in the Middle East. Conflict has been a constant feature of the region since 1945. This course will be primarily concerned with how and why these conflicts are generated, escalate, become protracted, and are resolved.

PS 1384 - TOPICS IN COMPARATIVE POLITICS

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1388 - FULBRIGHT SEMINAR IN ITALIAN STUDIES

Minimum Credits: 3
Maximum Credits: 3
The Fulbright seminar in Italian studies is a spring-term undergraduate-level course offered by the visiting Fulbright distinguished scholar from Italy. This course is typically offered in the fields of art history, cultural studies, film, history, literature, museum studies, political science, or urban studies. The description will vary each term depending on the field in which it will be offered.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

PS 1501 - THEORY OF INTERNATIONAL RELATIONS

Minimum Credits: 3
Maximum Credits: 3
This course explores central concepts and theories employed by political scientists to explain how world politics functions. You will be introduced to theoretical orientations such as realism, institutionalism, and constructivism, and we will discuss how constructs such as power, interests, identity, legitimacy, and order provide insight into political behavior. Much of the material examined in the course is abstract and you will need to think carefully about how the various concepts and arguments can be integrated. By the end of the course, you should have developed a relatively sophisticated conceptual framework with which to analyze events in world politics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PS 0500

PS 1503 - INTERNATIONAL ORGANIZATION

Minimum Credits: 3
Maximum Credits: 3
The course will focus on nongovernmental as well as intergovernmental organization, and will be concerned with the economic as well as the political aspects of such organization. Throughout the course, international organization will be approached as an arena for both conflict and
cooperation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1504 - NATIONALISM

Minimum Credits: 3
Maximum Credits: 3
Theories of nationalism, ethnicity, and race are examined and are contrasted with theories of modernization and socialism. Particular emphasis is placed on ethnonationalism in developed Western countries, such as Britain, France, Spain, Belgium, and Canada, and on ethnic politics in the U.S. Comparisons are drawn with nationalism in other types of political systems, particularly the USSR, Yugoslavia, and selected Middle East and African countries.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1508 - INTERNATIONAL TERRORISM

Minimum Credits: 3
Maximum Credits: 3
Terrorism has gone from a relatively marginal security concern to one of the thorniest security issues in international politics. Indeed, today there are few countries that do not suffer from some form of terrorism. And terrorist groups such as the Islamic state in Syria pose significant challenges for the international community. This course aims to introduce students to main debates surrounding terrorism. The course will deal with questions regarding the definition of terrorism, its causes and historical evolution, the relationship between insurgency and terrorism, the organizational structure of terrorist groups and the tactics they use. We will also analyze counter-terrorism and the factors that influence its effectiveness. Throughout the course, we will have a chance to take a closer look at some of the terrorist groups such as Al-Qaeda, Islamic state, Hamas, ETA, Tamil Tigers, among others. In the last part of the course, we will deal with the rise of domestic terrorism in the U.S.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

PS 1509 - CONFLICT AND WAR THEORY

Minimum Credits: 3
Maximum Credits: 3
The primary objective of this course is to introduce the student to theoretical arguments and empirical evidence concerning the sources of conflict and war in human society, particularly within the international arena. Reading material will be drawn from a number of disciplines, including psychology, sociology, history and political science.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1510 - COLDWAR: SOVIET UNION AND WEST 1917-91

Minimum Credits: 3
Maximum Credits: 3
This course is designed to help students understand the central question in world politics during much of the 20th century-the relationship between the West and the Soviet Union from 1917 to 1991. The course surveys the Western response to the formation of the USSR as the first "socialist" state and to the international communist movement which developed under its leadership from 1917 to 1991.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
PS 1511 - AMERICAN FOREIGN POLICY

Minimum Credits: 3
Maximum Credits: 3
Provides a historical survey of American foreign policy from the end of World War II until the present, an analysis of the decision making process led by the president of the United States, and a discussion of the impact of both the international political system and American domestic politics on this process.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1512 - INTERNATIONAL MIGRATION IN THE 21ST CENTURY

Minimum Credits: 3
Maximum Credits: 3
This course addresses some of the central questions surrounding current debates about immigration in the United States and Western Europe, including: Why do people move across international borders, and where do they go? What are the consequences of migration for the sending and the receiving countries? How do local communities, national governments, and international institutions respond to migration (including "illegal" migration)? This course aims to provide students with the theoretical and empirical knowledge needed to grapple with these questions intelligently.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1513 - FOREIGN POLICIES--CHANGING WORLD

Minimum Credits: 3
Maximum Credits: 3
The aim of this course is to introduce students to the analysis of foreign policy as a form of political behavior and to the specific factors influencing the foreign policies of several of the world's most powerful states. The lectures and readings follow several intertwining themes, covering: 1) the conceptual and analytical tools utilized to investigate and compare the foreign policies of states; 2) the nature of certain phenomena which present countries with complex and dangerous international problems, e.g. security, interdependence; 3) the particular sources, processes and outcomes involved in the foreign policies of several states including the United States, Russia and others. The approach is analytical and though some of the readings and lectures are historical, the emphasis is on the contemporary context. It is also comparative, offering students a look at how these states' domestic culture, processes and institutions affect their foreign policies. (International relations field)
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1514 - POLITICAL STRATEGY INTERNATIONAL RELATIONS

Minimum Credits: 3
Maximum Credits: 3
This course is designed to examine how governments attempt to achieve important foreign policy objectives. The focus will be on describing and evaluating such general strategies as containment, roll back and detente in the Soviet-American conflict.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1516 - TRANSATLANTIC POLICY ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
This new skills based course aims to provide students with crucial analytical and professional skills pertinent to the transatlantic policy world. Among them are: to read analytically and critically and to speak knowledgeably about a range of transatlantic issues that concern political scientists.
and policy makers, including immigration, environmental protection, social policies, and trade and economic development; and to communicate such policy analysis in a clear and persuasive manner accessible to a wide range of policy focused audiences at the international and national levels.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

### PS 1518 - GERMANY AND EUROPE: A FOREIGN POLICY TRANSFORMED

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course explores continuity and change in the foreign policy of Germany ' the largest, wealthiest, and arguably most influential European union member state ' from state unification through the present era. (International relations field)

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** Letter Grade

### PS 1521 - EASTERN EUROPE IN WORLD POLITICS

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Eastern Europe has now seen more than twenty years of dramatic changes encompassing a movement away from one-party dictatorship and state-run economies to democratic politics and market economies. These changes have affected and been affected by developments in Europe, including Russia, Euro-Atlantic relations and international relations more broadly. The aim of this course is to explore the background and dynamics of the remarkable changes in "the other Europe." The course will move quickly over the history of the region generally referred to as "East Europe" and will focus primarily on contemporary developments. A particular focus of the course is the impact on the region of developments elsewhere, especially in the politics and policies of outside powers, and the ripple effect of changes in the region on European and world politics.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

### PS 1531 - NATIONAL SECURITY POLICY

**Minimum Credits:** 3  
**Maximum Credits:** 3  
National security is becoming a crucial issue with an impact both in the international system and in the domestic environment. This course will discuss the different approaches to national security and the policies through which they have been implemented, such as military buildup, political and military alliances, military and economic consequences, and nuclear policies.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

### PS 1534 - CIVIL WARS

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course explores why peace sometimes lasts a long time and sometimes falls apart quickly after Civil Wars. We will examine how the international community deals with civil conflicts and what can be done to ensure a long-lasting peace in war-torn countries. Emphasis will be placed on the factors that increase the durability of peace and aid the establishment of long-term prospects for reconciliation to rebuild societies after wars. Students will gain knowledge of theories that explain whether and how peacekeeping forces, agreement design, power-sharing institutions, mediation, foreign aid, and post-war elections help domestic belligerents reach and keep peace.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis
PS 1536 - HUMAN SECURITY

Minimum Credits: 3
Maximum Credits: 3
This is a topics course in international relations focusing on the politics of human security. The politics of human security is an area of evolving interest within the field of international relations. Currently, few political science departments offer courses on the topic and there is little agreement on what should be included in such a course. The general consensus is that 'human security' differs from 'national security' in that the latter is concerned with the well-being of the state, while the former is concerned with the well-being of individuals. In this course, we will focus on how violence, political oppression, poverty, and ecological destruction threaten individual welfare and what the international community is (and is not) doing to address these concerns.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1537 - PEACEMAKING & PEACEKEEPING

Minimum Credits: 3
Maximum Credits: 3
This course explores the conditions that lead to initiation, escalation, and termination of Civil Wars as well as the circumstances that promote or restore peace within states. Why do Civil Wars break out in some countries but not others? Why do Civil Wars last as long as they do? How does the international community help resolve Civil Wars? The ultimate goal of this course is not to examine a particular Civil War in detail but rather to provide a broad theoretical treatment of Civil Wars, and a better understanding of international relations. Upon completion of this course, you should be familiar with the factors that mitigate or exacerbate conflict within states and develop informed insights about the mechanisms of conflict management and resolution.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1538 - THE POLITICS OF OIL AND NATURAL RESOURCES

Minimum Credits: 3
Maximum Credits: 3
Oil has played an incredible role in shaping the domestic and international politics of both producer and consumer countries around the globe. Since commercial production first began in the late 19th century, rising world demand for oil coupled with a geographically concentrated and exhaustible supply has defined the nature of global economic competition, economic and political development within countries and geo-political power struggles between countries. This course aims to shed light on why oil (and related natural resources) has had such a powerful effect on world politics to date and what our dependence on oil might mean for the future.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1541 - POLITICS GLOBAL ECONOMIC RELATIONS

Minimum Credits: 3
Maximum Credits: 3
This course examines the connections between power and wealth, states and markets, and economics and politics in order to gain a better understanding of the political underpinnings of the global economy as well as the influences that international economics has on national and international politics. It is an introduction to what political scientists call international political economy (or simply IPE).

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PS 1542 - GLOBAL ENVIRONMENTAL POLITICS
In this course we will explore the "politics" of international environmental issues in a way that complements a more scientific-technical treatment of the issues. We will draw upon international relations theories and concepts (e.g. power, dependency, complex interdependence, epistemic communities, regimes, and the logic of collective action) to help us explain environmental politics in the global arena.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1543 - GLOBALIZATION AND INTERNATIONAL POLITICS**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines globalization's political and economic effects on societal welfare around the world. We start by looking at economic globalization historically, comparing the degree and forms of international economic integration during the late 19th century with today. We then consider, in more detail, the domestic consequences of current changes in the international political economy, particularly expanding trade and increased international capital mobility, for both the developed democracies and developing countries.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1570 - GERMAN LANGUAGE TRAILER FOR PS 1518**

Minimum Credits: 1  
Maximum Credits: 1  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Satisfactory/No Credit

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**PS 1581 - CAPSTONE SEMINAR IN INTERNATIONAL RELATIONS**

Minimum Credits: 3  
Maximum Credits: 3  
Capstones are writing intensive courses for senior, PS majors. Subject matter will vary from term to term depending on the interests, area of expertise, and inclinations of the particular instructor.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: PS 0500; PLAN: Political Science (BA or BS or BPH); LVL: Sr

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**PS 1583 - TOPICS IN INTERNATIONAL RELATIONS**

Minimum Credits: 3  
Maximum Credits: 3  
Current topics of interest in international relations. Topics covered vary with instructor and term.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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**PS 1584 - GREECE IN ITS NEIGHBORHOOD: EUROPE & EASTERN MEDITERRANEAN**

Minimum Credits: 1  
Maximum Credits: 1  
This course is designed to provide knowledge on contemporary political and economic issues on Greece's agenda with regard to wider Europe
including the eastern Mediterranean and the black sea. Greece's politico-economic evolution is profoundly formed by its participation in the European integration process (i.e. The EU) and by dynamics in the Mediterranean and especially in Europe's southeastern front where it is itself located. The course offers an opportunity for students interested in politics, economics, history or sociology to learn about the main issues facing present day Greece in tandem with the EU and its other immediate neighbors. In the last century or more as mark Mazowe has put it recently 'Greece's has been at the forefront of Europe's evolution'.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

**PS 1587 - U.S. FOREIGN POLICY IN AFRICA**

Minimum Credits: 3
Maximum Credits: 3
This course will focus on the increasing engagement of the United States in Africa from the late 19th century until the present. Using a case study approach, students will analyze American foreign policy in Africa and explore the varied effects of those policies. These case studies will include the political realities of decolonization, the cold war, and economic aid and the social and cultural ties of black Americans to Africa. The course will identify specific crises in American and African history as focal points for study, but will also provide a larger narrative about American involvement in both the colonial and post-colonial development of Africa.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1601 - ANCIENT AND MEDIEVAL POLITICAL THOUGHT**

Minimum Credits: 3
Maximum Credits: 3
This course surveys the work of major thinkers in the Western political tradition from ancient Greece through the middle ages, such as Plato, Aristotle, Augustine, Aquinas, and others.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1602 - EARLY MODERN AND ENLIGHTENMENT POLITICAL THOUGHT**

Minimum Credits: 3
Maximum Credits: 3
This course surveys the work of major thinkers in the Western political tradition from the early modern period through the enlightenment, such as Machiavelli, Hobbes, Locke, Rousseau, and Burke.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1603 - MODERN AND CONTEMPORARY POLITICAL THOUGHT**

Minimum Credits: 3
Maximum Credits: 3
This course addresses the progress of democratic theory and relevant "challengers" in the course of the 19th and 20th centuries. Starting with post-revolutionary expressions of democracy, the class turns to the various challenges democracy faces in that time period: Marxism, communism, anarchism, fascism, and totalitarianism. It then looks at where democratic theory was left following these challenges in the 1960's and 1970's, and what that meant for the idea of democracy itself. Students in the class will gain exposure to Paine, DeToqueville, Marx, Lenin, Arendt, Goldman, Dahl, and Schumpeter. Grading will be primarily focused on short reaction papers, in-class writing and recall exercises, and a final argumentative research paper.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1604 - MYTH, PROPAGANDA, AND THE STATE**

Minimum Credits: 3
Maximum Credits: 3
This course focuses on a single notion: that states use narrative(s) to support their regimes. The class aims to prepare students for understanding how story, myth, propaganda, and indoctrination are used by various political actors to build, sustain, and/or destroy regimes. The course begins with a consideration of quintessential cases of states engaging in these practices (ancient Rome, fascist Italy, imperial Japan, and Cambodia under the Khmer Rouge). It then examines parallel examples within united states history and narratives. The second half of the course then focuses on the practice of propaganda specifically, considering its modern origins in WWI, examining transitions in technique across multiple states, weighing linkages to advertising and public information campaigns, and finally having students construct their own propaganda. The course concludes with a formal content analysis training focused on a particular vein of propaganda, and an assignment that has students blending content analysis consideration with political theory argument construction.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1605 - MODERN POLITICAL IDEOLOGIES**

Minimum Credits: 3
Maximum Credits: 3
This course is designed to familiarize students with a number of belief systems that have or have had significant followings in the 20th century. The course is designed to be a comparative assessment of a number of organized ways of thinking about politics and society.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1607 - AMERICAN POLITICAL THOUGHT**

Minimum Credits: 3
Maximum Credits: 3
This course provides a survey of American political thinking from the founding to the present.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

**PS 1610 - POLITICAL THEORY OF THE AMERICAN FOUNDING**

Minimum Credits: 3
Maximum Credits: 3
This course will examine the political theory of the American founding period through reading and discussion of the political thought of some of the leading figures. The main emphasis will be on the thought of Jefferson, Adams, Madison, and Hamilton, along with selections from others such as Franklin, Paine, and the anti-federalists. Major political and constitutional documents from the period, and their background, will also be examined. The materials will largely be from 1760-1800, including pre-revolutionary developments, the revolution, the confederation, transition and how they do so. The second part of the course will then examine why some countries are more successful in their transition, based on an examination of civil society and the types of political institutions (such as political parties, the executive system, and the judiciary) that countries develop. What influences these choices and how do these choices affect success and stability of the new democracy? Has international aid been successful in helping countries develop democratic practices?

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
PS 1612 - MARXISM

Minimum Credits: 3  
Maximum Credits: 3  
This course is concerned with Marxist political theory, with some attention to related philosophical and historical issues as well. Approximately two thirds of the course will be devoted to analysis of the original sources of Marxism—the writings of Marx and Engels; the remainder will consider various developments in the theory of Marxism.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PS 1614 - THEORIES OF JUSTICE

Minimum Credits: 3  
Maximum Credits: 3  
This course addresses the key intersection between two important topics in contemporary political theory: justice and globalization. The first half of the course will cover the highly influential works of John Rails as well as reactions from Robert Nozick, Onora O'Neill, and Susan Moller Okin. The second half of the course will weave in the issue of globalization to questions of justice 'again using rails' work and various respondents as a vehicle for doing so. The course ends with a significant applied project on the intersection of globalization and justice that will challenge students to consider the current state of justice in a particular global case of their choosing.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PS 1619 - DEMOCRATIC THEORY

Minimum Credits: 3  
Maximum Credits: 3  
Democracy is a centrally important concept in political science. Those who wish to study almost any aspect of politics 'from election campaigns to domestic policy processes to international relations' will, at some point, be expected to articulate a theory of democracy. Even those who study authoritarian regimes often use democratic regimes as counterpoint examples. In short, a well-rounded political scientist must know something about both democratic institutions and democratic theory. This course aims to provide students with an appreciation of the varieties of democratic thought, a knowledge of the great debates in the field, and a sense of how democratic ideals have been approximated in institutional forms.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PS 1622 - FEMINIST POLITICAL THOUGHT

Minimum Credits: 3  
Maximum Credits: 3  
This course considers the essential three waves of feminist political thought in Western tradition. The course moves from early feminist theorists to modern concerns and questions over whether the third wave of political feminism is still going strong or it is more helpful to discuss a "fourth wave" of feminism. The course concludes with a project for students to explore how to tackle real political gender norms in an applied fashion, generating theoretically-grounded policy and behavioral changes for the world around them.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PS 1629 - TOPICS IN POLITICAL THEORY

Minimum Credits: 3  
Maximum Credits: 3  
This course focuses intensely on a specific topic or problem in political theory; topics vary by instructor and term.
PS 1661 - GAME OF THRONES AND POLITICAL THEORY

Minimum Credits: 3
Maximum Credits: 3
This course considers George R.R. Martin's popular "song of fire and ice"/"game of thrones" series in a political context. The class will consider the way that the series speaks to and shapes political attitudes and beliefs, as well as the way that Martin's creative vision was formed by reference to history and politics. The course will begin with reading Martin's own writing: the book game of thrones. Then it will explore the historical inspiration of the series, the wars of the roses, and some of the political theory that was created in reaction to that period. Following that, it will cover a few critical political theorists whose works focus on narratives about power, deception, and authority (the core themes of the series). Students in the class will gain exposure to Machiavelli, Locke, de Montesquieu, and Arendt in the course of this consideration, while also getting a chance to understand and discuss the popular books and television show in academic and sustained fashion. As a note, prior reading or viewing of the series is not required, nor necessary, though it will be helpful (and a spoiler policy will be given before the start of the term to minimize concern for those at various points of encountering the series). Grading will be primarily focused on short reaction papers, in-class writing and recall exercises, and a final argumentative research paper.

PS 1674 - POLITICS OF GLOBAL INEQUALITY

Minimum Credits: 3
Maximum Credits: 3
This survey course introduces students to three kinds of inequality that cause concern among scholars, activists, and policy-makers and to the politics that surrounds these types of inequality. That is to say, we'll be studying inequality as a set of related phenomena, and we'll also be studying the politics that contribute to and arise from these phenomena. The course combines empirical analysis of inequality with normative analysis of its causes and repercussions.

PS 1675 - POLITICS OF HUMAN RIGHTS

Minimum Credits: 3
Maximum Credits: 3
Human rights have become the dominant normative discourse in global politics today. They are invoked by world leaders justifying military or 'humanitarian' interventions and by local and indigenous social movements challenging their domination with existing systems of social relations. They are lauded as essential to human dignity and decried as tools of imperialism and neo-colonialism. They are tools of the oppressor and tools for the oppressed. How can we make sense of these seemingly contradictory uses and understandings of human rights? This course seeks to explain human rights as fundamentally contested political claims. It develops this perspective through attention to the real politics of human rights, surveying existing human rights law and institutions, examining several important contemporary human rights issues, and reflecting on the different tools that political and social science offer for making sense of these controversies. The emphasis is on helping students to acquire a critical understanding of human rights that they can use to assess contemporary events; all students will focus on a particular country and issue of their choosing throughout the course as a way of grounding, focusing, and applying their learning.

PS 1681 - CAPSTONE SEMINAR IN POLITICAL THEORY
Capstones are writing intensive courses for senior, PS majors. Subject matter will vary from term to term depending on the interests, area of expertise, and inclinations of the particular instructor.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Political Science (BA or BS or BPH); LVL: Sr

**PS 1702 - CODING AND COMPUTATION SOCIAL SCIENCE**

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students to the methods and techniques of scientific inquiry in political science. It is designed to help students read and understand empirical social science research on both academic and policy issues. During the course, students will learn how to collect and analyze data and will receive instruction on the University of Pittsburgh computer system using batch and interactive statistical programs.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1710 - STRATEGY AND GAMES OF POLITICS**

Minimum Credits: 3  
Maximum Credits: 3  
How can we better understand politics by viewing it as a game of strategy? Campaigns, elections, persuasion, lobbying, conflict, and war involve elements of competition, cooperation, and chance. Learn how to model and analyze strategic interaction by playing classroom games and applying tools from game theory.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1836 - POLITICS THROUGH FILM**

Minimum Credits: 3  
Maximum Credits: 3  
This course uses cinema from a variety of countries to explore, in comparative perspective, central concepts and themes of politics, such as power, authority, conflict, leadership, ideology, propaganda, revolution, justice, and participation.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PS 1900 - INTERNSHIP**

Minimum Credits: 1  
Maximum Credits: 12  
Credit for internships per se is normally limited to the Washington center for learning alternatives or other special centers with which the University of Pittsburgh has formal arrangements.  
**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit

**PS 1901 - INDEPENDENT STUDY**
Minimum Credits: 1
Maximum Credits: 6
Independent study is normally associated with internships or special programs like the Washington center on learning alternatives.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

### PS 1902 - DIRECTED READING

Minimum Credits: 1  
Maximum Credits: 3  
Readings on special topics for which courses are not currently offered.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

### PS 1903 - DIRECTED RESEARCH

Minimum Credits: 1  
Maximum Credits: 6  
Research on special topics for which courses are not currently offered.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

### PS 1905 - DIRECTED STUDY: FIELD TRIP ABROAD

Minimum Credits: 1  
Maximum Credits: 6  
Readings on special topics for which courses are not currently offered.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

### PS 1910 - INSTITUTE OF POLITICS INTERNSHIP/SEMINAR

Minimum Credits: 4  
Maximum Credits: 4  
Students selected for the institute of politics internship will register for this course for the experiential component of their internships. The purpose of the internship experience is to provide the student with direct exposure to the process of public decision-making. Each student will spend nine hours a week working with an individual or office directly involved in the policy making process. Students will be given specific responsibilities and will be expected to be an active and integral part of the office in which they are placed. The details and terms of each placement will be carefully worked out and agreed upon by the student, the placement supervisor and the placement sponsor. Utmost care will be taken to insure that the student is placed in a situation that will maximize his/her exposure to all office activities and that the student is not left unsupervised and uninvolved. Students from all disciplines may apply, but preference will be given to students in their junior and senior years. Students must report to their placement for at least nine hours a week and fulfill any agreed upon responsibilities. Students will also be required to keep a written journal which describes and analyzes their internship experience.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade

### PSY 0005 - INTRODUCTION COGNITIVE SCIENCE
Minimum Credits: 3
Maximum Credits: 3
A survey course that utilizes a cross disciplinary approach to cognition, and an introduction to the various disciplines within a single coherent framework. The course covers basic cognitive processes of perception, language and thought, examining how each of these areas is examined within the disciplines of psychology, neuroscience, linguistics, philosophy and artificial intelligence.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 0010 - INTRODUCTION TO PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Summary of our present knowledge in fundamental areas of learning, sensation and perception, biological basis of behavior, developmental patterns, motivation, emotion, personality and adjustment, and measurement of behavior. Information and concepts are applied to problems in understanding human behavior. Additional out-of-class experiments or an equivalent research paper are a part of the course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 0011 - INTRODUCTION TO THE FIELD

Minimum Credits: 1
Maximum Credits: 1

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

PSY 0035 - RESEARCH METHODS

Minimum Credits: 4
Maximum Credits: 4
The course introduces students to the fundamentals of psychological research, including the nature of psychology as a science, the selection of a research problem, research designs, writing research proposals and papers using APA style and ethical considerations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (STAT 0200 or 1000 or 1100 or PSY 0020 or 0201 or 0270 or MATH 0133)

PSY 0105 - INTRODUCTION TO SOCIAL PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
An overview of social psychology. The scientific study of how one person's behavior and/or characteristics can influence the thoughts, feelings and behaviors of others. Topics covered include social perception, attitude formation and change; prejudice and discrimination; altruism and aggression; cooperation, competition, and bargaining; group decision making, leadership; and environmental effects on behavior.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

PSY 0160 - PSYCHOLOGY OF PERSONALITY

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200
Minimum Credits: 3  
Maximum Credits: 3  
Survey of major approaches to the study of personality, focusing on their relative abilities to provide coherent explanations for individual behavior. Issues involved in the assessment of personality will also be discussed and several assessment procedures evaluated. Recent research in personality psychology is reviewed and analyzed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

PSY 0182 - LAW AND SOCIAL PSYCHOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course focuses on the social psychological aspects of the criminal justice system. Topics covered include victim reporting, police discretion, pretrial processes, interaction in the courtroom, juror selection and decision making, the sentencing decision, the prison experience, parole decision making and return to society.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

PSY 0184 - PSYCHOLOGY OF GENDER

Minimum Credits: 3  
Maximum Credits: 3  
This course is intended to be an introduction to the theories and current research on the psychological nature of women and the psychology of gender roles. The male perspective on gender roles will also be included. The effects of cultural factors that determine both female and male roles in our society will be examined as well as how these roles affect different interpersonal relationships between women and men. The potential for change at both the societal and individual level will be discussed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200 or 0203 or 0210

PSY 0186 - CROSS CULTURAL PSYCHOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
The systematic, scientific study of human behavior takes into account the diverse ecological and cultural settings in which we live. The course covers traditional topics in human psychology-perception, cognition, personality development, intergroup relations and impact of social change. Research data are emphasized. Approach is interdisciplinary, integrating material from anthropology as well as psychology.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PSY 0310 - DEVELOPMENTAL PSYCHOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
The course focuses on development of the child from birth to adolescence, the current theory and research concerning social, emotional, intellectual, perceptual and language development. The organization of the course is topical. Coverage is confined to normal development; what develops, how and why in the average child. Little attention to abnormal development.  
Academic Career: Undergraduate
PSY 0380 - PSYCHOLOGY OF AGING
Minimum Credits: 3  
Maximum Credits: 3  
This course is designed to examine the basic psychological changes occurring through adulthood into old age. Particular emphasis will be given to the biological, social, and cultural influences. Discussions with some outside speakers, movies and demonstrations augment the course.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PSY 0405 - LEARNING AND MOTIVATION
Minimum Credits: 4  
Maximum Credits: 4  
This course elucidates fundamental principles of learning and motivation as derived predominantly from animal research. Focus is given to the empirical and conceptual processes underlying the facilitation and suppression of behavior, e.g. primary and conditioned reinforcement, non-reinforcement, punishment and avoidance as well as the generalization and discrimination of these processes.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

PSY 0422 - COGNITIVE PSYCHOLOGY
Minimum Credits: 3  
Maximum Credits: 3  
This course introduces students to core issues, theories, and experimental finding in cognitive psychology. Topics to be covered include sensory perception, attention, memory, imager, language, reasoning, problem solving and decision making.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

PSY 0423 - COGNITIVE PSYCHOLOGY LAB
Minimum Credits: 3  
Maximum Credits: 3  
This course exposes students to the details of experimental methods in cognitive psychology, with a particular focus on experimental laboratory studies. Students will also improve their understanding of research report writing, computer skills, and quantitative data analysis skills. The course is organized according to the research process, which is implemented twice across two projects. For each project, students read background literature, develop research hypotheses, design experiments to test them, conduct the experiments, analyze the results, and write-up the experiments.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PREQ: (PSY 0010 or 0012 or 0101 or 0200) and (PSY 0032 or 0035 or 1031) and PSY 0422; PLAN: Psychology (BS)

PSY 0505 - INTRODUCTION TO BIOPSYCHOLOGY
Minimum Credits: 3  
Maximum Credits: 3
This is a survey course in which the biological bases of certain classes of behavior are explored. The behaviors studied are limb movement, sleep and wakefulness, feeding, sexual behavior and learning and memory. Each of these behaviors is considered from the point of view of which brain structures and which neurotransmitters are involved in the production of that behavior. Emphasis is also placed on experimental techniques used to obtain relevant data and on the type of inferences which can be made from these experiments.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

**PSY 0510 - SENSATION AND PERCEPTION**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course examines the nature of the mechanisms that transform sensory input into our perceptual experience of the world. Topics include structure and function of sensory system, perception of color, object, motion, etc. Both information-processing and ecological approaches to the study of perception are considered.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

**PSY 0515 - REHABILITATION PSYCHOLOGY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PSY 0680 - INTRODUCTION INDUSTRIAL/ORGANIZATIONAL**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
A survey course of contemporary practice in the field of industrial psychology. Principal topics include employee selection, testing, performance appraisal, training and development, leadership, work motivation, organizational psychology, conditions at work, engineering psychology, employee safety and health, consumer and marketing psychology.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PSY 1025 - TESTS AND MEASUREMENT**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course reviews representative examples of current psychological tests and covers, in some detail, the nature of psychological measurement and the elements of test theory and test construction. Topics covered include item analysis, item selection techniques, reliability, validity and validation procedures, standardization and norming, and the conceptual problems in test interpretation.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (STAT 0200 or 1000 or 1100 or PSY 0020 or 0201 or 0270)

**PSY 1050 - TOPICS IN PSYCHOLOGY**
Minimum Credits: 3
Maximum Credits: 3
A topics course. Content will vary from term to term depending on instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0200

PSY 1051 - TOPICS IN SOCIAL PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Topics in social psychology will vary from term to term, depending on instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0105 or 0203 or 0210

PSY 1052 - TOPICS IN CLINICAL PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Topics in clinical psychology will vary from term to term, depending on instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1053 - TOPICS IN DEVELOPMENTAL PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Topics in developmental psychology will vary from term to term depending on instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (0202 or 0230 or 0310) and (STAT 0200 or 1000 or 1100)

PSY 1054 - TOPICS IN COGNITIVE PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Topics in cognitive psychology will vary from term to term, depending on instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (PSY 0032 or 0035 or 1031)

PSY 1057 - TOPICS IN BIOLOGICAL AND HEALTH PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Topics in biological and health psychology will vary from term to term, depending on instructor.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0010 or 0012 or 0015 or 0200) and (PSY 0032 or 0035 or 1031)

PSY 1059 - TOPICS IN ADVANCED RESEARCH METHODS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0035 and (STAT 0200 or 1000 or 1100); PROG: School of Arts & Sciences

PSY 1075 - HISTORY & SYSTEMS OF PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200; LVL: Jr or Sr

PSY 1080 - PSYCHOLOGY AND THE MEDIA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1110 - PSYCHOLOGICAL ASPECTS OF HUMAN SEXUALITY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [(PSY 0010 or 0012 or 0015 or 0101 or 0200) and (PSY 0105 or 0203 or 0210)] or (PSY 0160 or 0184 or 0204 or 0240)

PSY 1112 - PSYCHOLOGICAL ASPECTS OF HUMAN SEXUALITY: RESEARCH WRITING PRACTICUM

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0035 or 0032 or 1031) and (STAT 0200 or 1000 or 1100 or PSY 0020 or 0201 or 0270)
PSY 1130 - SPECIAL TOPICS ON PSYCHOLOGY OF GENDER

Minimum Credits: 3
Maximum Credits: 3
An advanced course which deals with psychological research relating to women and power. Topics covered include physical power, nonverbal perpetuation of power differences, power motivation, social power, power dynamics in the family and political power. Each semester the course has a different focus.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1134 - SOCIAL BONDING: FROM MOLECULES TO MIND

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1135 - SOCIAL PERCEPTION AND COGNITION

Minimum Credits: 3
Maximum Credits: 3
Historical problems and current issues are identified. Some general principles of perception and cognition are reviewed. Recent research and theoretical formulations are considered in each of these areas; impression formation, interpersonal attraction, causal and moral attribution, prediction of behavior, perceptions of interpersonal relations, group stereotyping and prejudice.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1137 - CLOSE RELATIONSHIPS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1139 - SOCIAL NEUROSCIENCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1142 - CONFLICT RESOLUTION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
PSY 1155 - PSYCHOLOGY OF SMALL GROUPS

Minimum Credits: 3
Maximum Credits: 3
This course surveys basic principles and research findings involving small groups. Some of the topics covered include social facilitation, conformity, and cohesiveness, social comparison, roles, status, and norms, leadership and inter-group relations. Social processes within both laboratory and natural groups will be studied, and some emphasis will be placed on the practical relevance of small group research to the everyday experience of group membership.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0105 or 0160 or 0203 or 0204 or 0210 or 0240

PSY 1205 - ABNORMAL PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course provides an overview of the major issues in the area of mental illness. This course emphasizes the scientific approach to understanding the major psychological and behavioral disorders. The research and clinical literatures regarding the etiology, course and treatment of these disorders will be presented.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

PSY 1210 - INTRODUCTION TO CLINICAL PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course is directed toward the student seriously interested in the major issues pertaining to clinical psychology. The course provides an overview of the major therapeutic approaches and incorporates other germane issues such as history of the field, assessment issues, interviewing approaches, community psychology, behavioral medicine, and clinical research and methodology. Present therapeutic approaches are placed in the context of an evolving discipline, anchored in an empirical-scientific approach to the subject matter.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (PSY 1205 or 0206 or 1141)

PSY 1213 - PSYCHOPATHOLOGY ADVANCED LAB

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1215 - HEALTH PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to the major questions and methods which have guided the research in health psychology. This field examines the role of psychological and social factors in the development and progression of medical disease. Three main topics are covered: (1) conceptual underpinnings of health psychology, (2) psychosocial factors and specific diseases, and (3) evaluating behavioral medicine interventions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (PSY 0035 or 0032 or 1031) and (PSY 0105 or 0505 or 1500 or 0203 or 0210)

PSY 1217 - FUNCTIONAL MRI

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1225 - PSYCHOLOGY OF EMOTION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0035 or 0032 or 1031) and (PSY 0105 or 0160 or 0310 or 0202 or 0203 or 0204 or 0210 or 0230 or 0240)

PSY 1226 - ANXIETY THEORY & TREATMENT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1227 - BEHAVIOR GENETICS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1230 - PSYCHOLOGY OF DEATH AND DYING

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200
PSY 1235 - ALCOHOL USE AND ABUSE

Minimum Credits: 3  
Maximum Credits: 3  
This course covers a range of topics related to alcohol, including history, anthropology, sociology, epidemiology and literature. Topics include psychopharmacology, social-cognitive effects of drinking, etiology of alcoholism, as well as the prevention and treatment of alcoholism. This course also addresses abuse of other selected drugs such as nicotine, cocaine and heroin.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (PSY 0010 or 0012) and PSY 0035 and PSY 1205 and (PSY 0105 or 0420 or 0422)

PSY 1237 - NICOTINE, TOBACCO, AND HEALTH

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PSY 1255 - PRINCIPLES OF BEHAVIOR MODIFICATION

Minimum Credits: 3  
Maximum Credits: 3  
Behavior modification techniques are the most commonly used interventions in psychology, education and health psychology. In this course, students will learn basic concepts, theories and research in behavior modification in the context of clinical applications. Most learning will occur through practical, applied exercises. In one set of exercises, students will choose a hypothetical client and apply behavioral methods to their client's case. Students will develop a portfolio of assessment and treatment techniques for their client.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PSY 1270 - CHILD PSYCHOPATHOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course considers research and theory which bear on the development of psychological disorders in children. Biological and environmental factors which contribute to childhood disorders are considered with special emphasis on the role of the family. Childhood psychosis, hyperactivity, and depression are studied to illustrate theoretical models and empirical findings.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (PSY 0310 or 0202 or 0230) and (PSY 1205 or 0206 or 1141)

PSY 1305 - EXPERIMENTAL CHILD PSYCHOLOGY

Minimum Credits: 4  
Maximum Credits: 4  
This course introduces students to the scientific basis of theories and issues in developmental psychology. In lectures, discussion and structured experiments students learn about and apply basic methods of research in child development, including conceptualization, design, data collection, analysis and write-up. This course exposes students to development over infancy and childhood.  
Academic Career: Undergraduate  
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0010 and 0035 and 0310

PSY 1312 - CHILD DEVELOPMENT & SOCIAL POLICY

Minimum Credits: 3
Maximum Credits: 3
In this course we will examine issues in child development that are also the subject of public policy debates with implications for the well-being of children and families. Topics will include poverty and young children's development, the child care debate, early intervention for children at risk (e.g. head start), issues in child abuse including family preservation, foster care, and children's testimony, and decisions about child custody and visitation following parental divorce.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0202 or 0230 or 0310

PSY 1315 - DEVELOPMENTAL PSYCH: INFANCY

Minimum Credits: 3
Maximum Credits: 3
This course will explore how infants develop during the first two years of life. Some of the specific topics to be covered include: prenatal development, alternative birth techniques, capabilities of the newborn, the development of perceptual and memorial processes during the first year, early language development, and the development of infant parent attachments.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (PSY 0310 or 0202 or 0230)

PSY 1320 - LANGUAGE DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
This course addresses the question of how children acquire a system of communication that involves an extremely complex set of rules and principles. Students also learn about the structure of the language itself and the nature of linguistic analysis.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0310 or 0202 or 0230

PSY 1321 - AUTISM SPECTRUM DISORDER

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1325 - DEVELOPMENTAL PSYCHOLOGY: SOCIAL DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
This course is an introductory survey of methods, theories, and research on the personality and social development of humans from infancy through early adolescence in the United States. This course examines individual development: how people come to be who they are, and how change and continuity work together over time. First comes an investigation of starting points in development. We will study the infant's first social relationship,
and we will try to understand the connection between early temperament and mature personality. Basic concepts of developmental theory will also be introduced. Next we examine how children function within increasingly complex and varied social environments such as families, peer groups, and educational settings. Topics covered include self-development, sex differences and gender role development, achievement motivation, prosocial behavior/altruism, moral development, and antisocial behavior. This upper level course is designed for psychology majors. The course may be of interest to other advanced undergraduate students who are interested in psychology, child and adolescent development, education, and related disciplines.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200) and (PSY 0310 or 0202 or 0230) and (PSY 0035 or 0032 or 1031)

**PSY 1330 - DVLPMNTL PSYCH: COGNITV DEVELP**

- Minimum Credits: 3  
- Maximum Credits: 3  
This course covers major areas of cognitive and intellectual development with an emphasis on learning and memory.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PSY 1355 - ADOLESCENCE**

- Minimum Credits: 3  
- Maximum Credits: 3  
The period of adolescence will first be studied from both a psychological and sociological perspective. Focus is on the individual as he/she experiences physical, cognitive, and social changes. Contributions of such theorists as Freud, Erikson, and Piaget are highlighted. A number of critical issues and conflicts of adolescence are discussed i.e. the generation gap, sex roles and behaviors, juvenile delinquency.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (PSY 0010 or 0012 or 0015 or 0101 or 0200)

**PSY 1357 - PSYCHOLOGY OF AGING**

- Minimum Credits: 3  
- Maximum Credits: 3  
This course is designed to examine the psychological changes that occur through adulthood and into late life from a life-span developmental perspective. Biological, cognitive, emotional, and social aspects of the aging process will be explored in depth. Historical and contemporary perspectives on aging as well as cultural influences on the experience of aging will be examined. Psychological aspects of aging will be explored from individual, familial, and societal viewpoints. Lecture, class discussion, small group work and media presentations will be utilized.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

**PSY 1360 - PSYCHOLOGY OF BLACK CHILDREN**

- Minimum Credits: 3  
- Maximum Credits: 3  
This course surveys and critically evaluates literature on the development of black children from birth to adolescence. Topics to be covered include prenatal influences on growth and development; structure and socialization practices of black families; black English and language development; cognitive development; psychological testing of black children; self-concept and racial identification.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture
**PSY 1435 - BEHAVIOR CONTROL IN SOCIETY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course provides an overview of the scientific principles used in behavior management and examines some of the uses of behavior management in various work settings, other institutional settings, in governmental control and in open society. The relation of the uses of behavior control procedures to ethics, social planning, and individual freedom are explored. Behavior analysis serves as the basis for examining traditional management of people as it is found in a variety of social situations without the intervention of experts in behavior management.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PSY 1460 - MEMORY AND MEMORIZATION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Why is it that some things seem so easy to learn and others seem so difficult? Is it possible to train memory? What changes in the brain when we learn and remember? In this class you will explore various methods of learning to gain an understanding of the complexities of human memory. You will work on training your memory and determine how much your memory can improve, and how much those improvements generalize from one form of memory to the next. Along the way, you will learn about the major theories of memory and identify which learning techniques result in the best memory performance. You will also gain knowledge about the neural bases of learning and memory.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PSY 1470 - COGNITION AND THE BRAIN**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course examines fundamental issues in cognitive neuroscience, an interdisciplinary science covering topics in the neural basis of sensory perception, motor control, attention, short-term and long-term memory, language, emotion, decision-making and consciousness. Some of the areas covered are how strokes affect speech, how perception is unified, how the visual system analyzes color, shape, and location of objects. Research methods and research results are considered.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**Course Requirements:** PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200 or NROSCI 1000 or 1003

**PSY 1471 - MAPPING BRAIN CONNECTIVITY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This class will cover background and technical methods of mapping high definition fiber tracking of brain connectivity for basic research and clinical imaging. Students will learn to map/quantify anatomical connections of the human brain. These techniques are used to study brain systems, disorders, and development, and to assist in planning neurosurgery. Students may take an optional one-credit laboratory in which they will learn to use advanced computation software to execute research projects including developing of technical methods, mapping brain networks, or clinical analysis of data.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
PSY 1514 - EVOLUTIONARY PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
The relevance of Darwinian Theory to the study of anatomy and physiology has been obvious for many decades. Only recently however, have evolutionists begun to focus their explanatory tools on cognition, motivation, emotion, perception, and "mind". This course will examine the rationale, contributions, failures and future of evolutionary approaches to psychological phenomena. Initial lectures on the status of Evolutionary Theory will prepare the students for the discussion and evaluation of evolutionary psychology that will follow.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: PSY 0010 or 0012 or 0015 or 0101 or 0200

PSY 1580 - LANGUAGE AND THE MIND

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the study of language as a cognitive science, focusing on the mental representations of the sounds of speech. Throughout the course we will emphasize the scientific methods used by researchers to investigate questions about the sounds of language. Because this course is multidisciplinary in nature, drawing primarily from the fields of linguistics and psychology, students will be introduced to the different methods, techniques, and technologies used by researchers in both fields.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PSY 1635 - ORGANIZATIONAL PSYCHOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course will provide broad exposure to the field of industrial/organizational psychology. Course topics will include (but are not limited to) personnel selection, training, worker motivation, job attitudes, performance appraisal, leadership, and career development. The class format will include multiple hands-on assignments to assist the student in understanding how psychological theories can be applied in a work context. Grades will also be derived from performance on formal tests.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (PSY 0010 or 0012 or 0101 or 0200) and (PSY 0035 or 0032 or 1031) and (STAT 0200 or 1000 or 1100 or PSY 0020 or 0201 or 0270)

PSY 1900 - SUPERVISED FIELD PLACEMENT

Minimum Credits: 1
Maximum Credits: 6
Psychology majors may receive up to 6 credits for field experience in supervised agencies in the community. The experiences vary from term to term.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Satisfactory/No Credit
Course Requirements: PROG: Psychology (BS); LEVEL: Junior or Senior

PSY 1901 - CASE MANAGEMENT FIELD PLACEMENT

Minimum Credits: 6
Maximum Credits: 6
Supervised field placement in community agencies for psychology majors enrolled in the case management certificate program

**Academic Career:** Undergraduate

**Course Component:** Practicum

**Grade Component:** Satisfactory/No Credit

**PSY 1902 - DIRECTED INDIVIDUAL READING**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
Under special circumstances, psychology majors can design an individual reading course with a member of the department and in consultation with the graduate advisor.

**Academic Career:** Undergraduate

**Course Component:** Directed Studies

**Grade Component:** LG/SNC Elective Basis

**PSY 1903 - DIRECTED INDIVIDUAL RESEARCH**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
This course involves student participation in individual experimental research supervised by a member of the department faculty. This course is particularly valuable for students interested in graduate study in psychology.

**Academic Career:** Undergraduate

**Course Component:** Directed Studies

**Grade Component:** Satisfactory/No Credit

**PSY 1950 - PSYCHOLOGY SENIOR SEMINAR**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
This one-credit course is designed for psychology majors in their final year of study (either final or next-to-final term). Course content will include exploration of the field of psychology, self-assessment of learning experiences, identification of marketable skills for career and graduate school paths, and planning for transition to post-college life. Permission to enroll in the course must be obtained from the psychology advising office.

**Academic Career:** Undergraduate

**Course Component:** Seminar

**Grade Component:** Satisfactory/No Credit

**Course Requirements:** PLAN: Psychology (BS or BPH); LVL: Sr

**PSY 1970 - UNDERGRADUATE TEACHING ASSISTANT EXPERIENCE**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
This course involves student participation as an undergraduate teaching assistant (UTA) for a psychology course under the supervision of a faculty member.

**Academic Career:** Undergraduate

**Course Component:** Directed Studies

**Grade Component:** Satisfactory/No Credit

**PSY 1973 - HONORS DIRECTED RESEARCH**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is the first term of research in preparation for the honors major in psychology. Development of the research problem and approval of the theses prospectus.

**Academic Career:** Undergraduate
**Course Component:** Directed Studies  
**Grade Component:** Letter Grade

**PSY 1975 - HONORS THESIS/MAJORS**

Minimum Credits: 3  
Maximum Credits: 3  
Undergraduate honors majors in psychology will register for this course when their thesis proposal has been approved and they are ready to conduct and write up the research.  
**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** Letter Grade

**PSYED 0005 - LIFE SPAN DEVELOPMENT**

Minimum Credits: 3  
Maximum Credits: 3  
This course follows the developing person from conception until the end of life. The course combines theory, research and practical applications from developmental psychology. Lecture topics include genetic influences on development; prenatal and birth factors; physical, cognitive, social, personality, and cultural variables which influence development in infancy, childhood, adolescence, early-, middle-, and late adulthood.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**PSYED 1001 - INTRO EDUCATIONAL PSYCHOLOGY**

Minimum Credits: 3  
Maximum Credits: 3  
A survey of current problems in education which psychological theory and research can address. Topics include developmental approaches to teaching, educational applications of learning theory, classroom management, and testing strategies for teachers.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**PSYED 1002 - DEVELOPMENT: CONCEPTION THROUGH EARLY CHILDHOOD**

Minimum Credits: 3  
Maximum Credits: 3  
This course follows the developing child from the moment of conception until early adolescence. The course content includes the biological foundations of development, physical and motor changes, language, cognition, sex role development, personality, family and peer relationships, school influences, and examples of deviant development. Theory and application are integrated.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Applied Developmental Psych (BS)

**PSYED 1003 - DEVELOPMENT: MIDDLE CHILDHOOD THROUGH ADOLESCENCE**

Minimum Credits: 3  
Maximum Credits: 3  
Adolescence is studied from a developmental perspective. Discussion begins with the history and cultural varieties of adolescence and proceeds to cover psychological accompaniments to puberty. Lectures and readings deal with cognitive growth, identity formation, moral development, family and peer relationships, psychological disturbance and education through the adolescent years. 
**Academic Career:** Undergraduate
PSYED 1004 - ATTENTIONAL TEACHING PRACTICES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

This course provides an overview of both quantitative and qualitative research methods. Particular attention is paid to methods of observation, interviewing, and summarizing qualitative data. Students use qualitative or mixed methods to produce a final research project.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: CREQ: PSYED 1002

PSYED 1007 - METHODS OF EVIDENCE-BASED PRACTICE

Minimum Credits: 3
Maximum Credits: 3

A study of developmental disabilities and their impact on child/family development. Includes discussion of philosophy of service, legislation, and service systems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: PSYED 1002

PSYED 1012 - DEVELOPMENTAL DISABILITIES

Minimum Credits: 3
Maximum Credits: 3

Examines the traditional medical-model view of psychopathology in children and youth, presents alternative ways of looking at this behavior, and gives an introduction to the interpersonal skills needed for therapeutic intervention.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: PSYED 1003

PSYED 1013 - DEVELOPMENTAL PSYCHOPATHOLOGY

Minimum Credits: 3
Maximum Credits: 3

A study of activity and environmental programming; its relationship to the development of children and youth; and practical applications in media selection, use, and environmental design for various populations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis  
Course Requirements: PLAN: Applied Developmental Psychology(BS)

**PSYED 1021 - THEORY, MEANING AND PRACTICE OF PLAY AND ACTIVITY**

Minimum Credits: 3  
Maximum Credits: 3  
This course provides a comprehensive overview of the role of play and activity in human development, with a particular focus on ways of utilizing play and activity to promote positive growth in social, emotional, physical, and cognitive domains; and on interpreting the meaning of individual and group play and activity. Play and activity in the lives of persons of all ages will be considered with some emphasis on the early and school years. While academic learning is essential in this course, the focus will be on hands-on, real play as the ideal way to learn about it, and encouragement of a life-long playful spirit.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

**PSYED 1024 - FAMILY DYNAMICS**

Minimum Credits: 3  
Maximum Credits: 3  
Study of different family types in the American culture and an in-depth analysis of how each family structure contributes to the development (both functionally and dysfunctionally) of all family members, especially the children and youth of the family.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: PSYED 1013

**PSYED 1025 - PROFESSIONAL SEMINAR 1**

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to the scope, organization and current issues in the child development and child and youth care field as related to the profession and to the variety of services to children and families. Field experiences include site visits to agencies providing a variety of services.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PLAN: Applied Developmental Psychology(BS)

**PSYED 1028 - DEVELOPMENTAL PRACTICE SEMINAR 1**

Minimum Credits: 3  
Maximum Credits: 3  
A seminar for the integration of theory, research, practice skills, and experience related to developmentally focused child and youth care practice. The seminar is particularly focused on the internship experience and the related knowledge base.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PLAN: Applied Developmental Psychology(BS); LVL: Sr

**PSYED 1029 - DEVELOPMENTAL PRACTICE SEMINAR 2**

Minimum Credits: 3  
Maximum Credits: 3  
A continuation of Developmental Practice Seminar 1 for the integration of theory, research, practice skills and experience related to developmentally
focused child and youth care practice. The seminar is particularly focused on the internship experience and the related knowledge base.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SNC Elective Basis
**Course Requirements:** PLAN: Applied Developmental Psych (BS)

**PSYED 1031 - SENIOR PROJECT**

Minimum Credits: 1
Maximum Credits: 3
Student will work with a faculty member or do an independent project relevant to their individual interests.

**Academic Career:** Undergraduate
**Course Component:** Directed Studies
**Grade Component:** Letter Grade
**Course Requirements:** PLAN: Applied Developmental Psych (BS)

**PSYED 1032 - PSYCHOSOCIAL ASPECTS OF ILLNESS**

Minimum Credits: 3
Maximum Credits: 3
This course is designed to enable students to understand the nature of and dynamics of pediatric illness, appreciate the impact an acute or prolonged health care experience may have upon children throughout the developmental process, better understand a family health care philosophy and gain an understanding of the multi-faceted role child life specialists play in today's health care environment.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** LG/SU3 Elective Basis

**PSYED 1036 - DEVELOPMENTAL MEANING CULTURAL DISTN**

Minimum Credits: 3
Maximum Credits: 3
An exploration of major dimensions and issues of cultural diversity with a particular emphasis on their impact on the developing child and their implications for programs for children and youth.

**Academic Career:** Undergraduate
**Course Component:** Lecture
**Grade Component:** Letter Grade
**Course Requirements:** PLAN: Applied Developmental Psych (BS)

**PSYED 1042 - CHILD & YOUTH WORK PRACTICE 1**

Minimum Credits: 1
Maximum Credits: 6
A university approved, agency based, supervised internship in developmental/interventive practice. This internship may focus on work with and/or for children, youth and families. Fifty hours of placement are required for each credit of registration.

**Academic Career:** Undergraduate
**Course Component:** Practicum
**Grade Component:** Letter Grade
**Course Requirements:** PLAN: Applied Developmental Psych (BS)

**PSYED 1043 - CHILD AND YOUTH WORK PRACTICE 2**

Minimum Credits: 1
Maximum Credits: 6
This course is a university approved, agency based, supervised internship in applied developmental practice which may or may not involve
intervention practices. The internship may focus on work with and/or for children, youth and/or families. Fifty hours of on-site placement are required for each credit of registration.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Applied Developmental Psych (BS)

**PSYED 1050 - SUPRVSN ADM CHLD YOUTH WRK SETNG**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course focuses on issues and skill development in areas related to management and supervision in child and youth care programs. A modular format will cover the function of supervision and administration in child care; communication skills; supervisory functions and skills; program development and management; and current issues in child and youth care administration.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Applied Developmental Psych (BS)

**PSYED 1080 - PSYCHOLOGY AND THE MEDIA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Psychology and the media focuses on impact of electronic media (radio, television and internet) upon society, especially children. Course introduces students to various psychological theories (e.g., Social cognitive theory, information processing, uses and gratifications theory) to explain how we respond to and learn from the media. Topics receiving special attention include media violence, advertising, health-related behaviors, news, media effects upon academic behavior, and cultural issues. A visit to a local radio or television station will be arranged.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**PSYED 1088 - SP TOPICS CHILD DVLP/CHILD CARE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course focuses on selected topical areas of special importance for child care.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**PSYED 1089 - SPECIAL TOPICS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**PSYED 1098 - DIRECTED RESEARCH**

**Minimum Credits:** 1  
**Maximum Credits:** 6  
Student pursues research under the direction of a faculty member.  
**Academic Career:** Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis

PSYED 1099 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 6
Provides advanced students an opportunity to explore in depth an area of particular interest to them. It is the student's responsibility to find a faculty member willing to undertake such a tutorial.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis

PSYED 1141 - CHILD AND YOUTH WORK 1 - INTRODUCTION

Minimum Credits: 3
Maximum Credits: 3
This course introduces contemporary issues in the vibrant and growing field of positive youth development. Our developmental-ecological perspective emphasizes both individual growth and the impact of systems on children and youth. Class topics include: settings where child and youth development occurs (e.g. community-based programs, religious and cultural institutions, residential treatment); the impact of popular media, social media, and other technology on youth development; and issues of diversity and privilege. We investigate efforts to support the development of thriving and other positive outcomes, as well as traditional prevention approaches. The course is benchmarked to the child and youth work competencies of the North American competency project and to the certification program of the child and youth care certification board, inc.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PSYED 1143 - CHILD AND YOUTH WORK 2: ADVANCED ISSUES

Minimum Credits: 3
Maximum Credits: 3
This course expands and deepens on themes introduced in Child and Youth Work I. Topics include the challenges of ecological approaches to learning and development; the roles of decision-makers at multiple levels (government, program directors, youth workers, youth themselves); and the benefits and challenges of youth-adult partnership approaches to child and youth work.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PSYED 1198 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 3
Student pursues study of various topics under the direction of faculty.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

PSYED 1233 - COMMUNITY-BASED ACTION RESEARCH 1

Minimum Credits: 2
Maximum Credits: 2
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
PSYED 1234 - COMMUNITY-BASED ACTION RESEARCH 2

Minimum Credits: 2  
Maximum Credits: 2  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

PSYED 1605 - CHILD AND YOUTH CARE BASIC COURSE

Minimum Credits: 3  
Maximum Credits: 3  
This strategy-based course, offered in partnership with the Allegheny partners for out-of-school time (APOST) of the united way, is attended by both University students and local youth workers. Hands-on, interactive sessions introduce essential concepts and skills in professional child and youth care, geared towards settings including early childhood education, after-school programming, foster parenting, residential treatment, basic care, emergency shelters, recreation, corrections, community youth services, and developmental disabilities. The course prepares participants for child and youth care certification with topics such as professional ethics, assessment, developmentally-based programming, and activity development.  
University students taking this course for credit will complete reading and writing assignments to accompany the practice-focused sessions.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

PIA 2115 - ENVIRONMENTAL ECONOMICS

Minimum Credits: 3  
Maximum Credits: 3  
This course will combine multi-disciplinary environmental topics in an introductory level course. The concept of environmental policy and its impact on environmental management will be introduced. It will focus on the various scientific, technical and social disciplines including the basic sciences as well as law, engineering, public health and economics. Attention will also be given to the effects of developing and changing environmental policy on selected industries as well as natural resources.  
Academic Career: GRAD  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: Graduate School of Public and International Affairs students only.

PIA 2140 - FINANCIAL PRACTICES FOR ECONOMICS AND ENVIRONMENTAL SUSTAINABILITY

Minimum Credits: 3  
Maximum Credits: 3  
This course examines the financial practices and processes required to promote economic and environmental sustainability (both public and private comparisons). Emphasis is put on how the economic component husbands the wise use of resources to effectively achieve specific organizational successes, promoting societal or external long-term prosperity, enhancing the opportunity for living things in the environment. On the environmental and social sides stress is put on respecting things and people both in particular organizational and external community. Next focus is put on financial indicators (both early warning and long term) that have been developed and applied to predict potential financial problems before they arise. Attention is focused on financial indicators (the financial monitoring trend system-ftms) that have been developed to promote stable and sustainable financial management.  
Academic Career: GRAD  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: Graduate School of Public and International Affairs students only.

PIA 2164 - NATURAL RESOURCES GOVERNANCE AND MANAGEMENT
Minimum Credits: 3
Maximum Credits: 3
This course considers how institutions influence resource and environmental outcomes. In particular, this course will focus on how the design of property rights influences prospects for effective management of resources such as energy, water, and biodiversity. Although the problem of resource management is complex, we will study how the structure of property rights, the rules governing ownership in society, provides a framework to understand when societies succeed and fail in their effort to manage resources effectively. In a general sense, the course will show why property rights, and the political institutions within which property rights are specified and enforced, are the key to understanding the extent to which societies are able to manage natural resources effectively.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: Graduate School of Public and International Affairs students only.

PIA 2231 - CONTEMPORARY US ENERGY POLICY

Minimum Credits: 3
Maximum Credits: 3
This class examines the energy policy choices facing U.S. policymakers. The choices involve myriad issues, including: allowing fuel exports, regulating greenhouse gas emissions, subsidizing renewable fuels and energy efficiency investments, allowing drilling on public lands, and allocating funds for research across energy sources and technologies. Broader issues include: understanding and evaluating the justifications used to support energy policies; making policy when costs and benefits are uncertain, occur in long term, and are hard to quantify; what's the 'right' price of energy; market and government failures ' what are they and how do we address them?

Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade

PIA 2388 - INTERNATIONAL LAW AND POLICY

Minimum Credits: 3
Maximum Credits: 3
This course begins with an exploration of the history and sources of international law. We then survey the legal process and the application of international law to explore laws governing relations among states, and its expansion to non-state actors (e.g., the private individual, international organizations, NGOs, and multinational corporations). Students will learn about how and why international law is created and develop an understanding of the mechanisms and institutions of its enforcement. The enforcement of international law, its successes and difficulties, will require students to learn about, inter alia, the nature of international disputes, the subjects of international law, and the forums in which disputes are settled. Throughout the course, we will consider the emerging challenges faced in an international law paradigm including, organized violence, global markets, cultural coherency and conflict, identity and citizenship, technological evolution, and environmental regulation.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: Graduate School of Public and International Affairs students only.

PIA 2502 - GLOBAL ENVIRONMENTAL POLICY

Minimum Credits: 3
Maximum Credits: 3
The 1992 Rio Declaration on environment and development states that 'to achieve sustainable development, environmental protection shall constitute an integral part of the development process.' We discuss the linkages between development and the environment, and the role of women, indigenous peoples, and the poor in achieving equitable development and environmental protection. Using tools from economics and policy analysis, we explore the conceptualization of environmental problems (market or government failure); various policy instruments to rectify environmental problems (regulations, voluntary programs, taxes, tradable permits, payments for environmental services and international treaties such as the Basel Convention, the Montreal Protocol, and the Kyoto Protocol), and the link between trade and the environment. Students' case presentations illustrate the challenges of environmental management in developing countries and the roles of civil society, NGOs, corporations, and international institutions such as the world bank, world trade organization, and united nations environmental program. Over the course of the semester, students are responsible for several policy memos and PowerPoint presentations.
PIA 2510 - ECONOMICS OF DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3

We use basic conceptual frameworks from economics and quantitative methods to examine economic development issues. We begin by discussing Amartya Sen's concept of 'development as freedom' and measures of development such as the Human Development Index. We examine when the market and government can serve as appropriate mechanisms to allocate resources within the economy. We discuss the institutions that are needed to ensure that markets function well. We study innovations, such as disclosure programs, that reduce corruption. We examine gender-sensitive pro-poor strategies, such as micro-credit programs, the granting of property rights to women, investment into girls' schooling and women's reproductive health. We study World Trade Organization provisions that assist or impede poor countries' access to drugs in combating AIDS and other public health crises. We review the rules of the WTO that attempt to balance free trade and countries' ability to protect public health and the environment. We discuss the role of international trade (e.g., OECD subsidies for agriculture), foreign aid and debt in encouraging or impeding economic development. Students will be graded on policy memos that are well written, based on quantitative and qualitative evidence, and oral briefings that recommend solutions to development challenges faced by governments, international organizations, non-governmental organizations or corporations.

PIA 2520 - FOOD SECURITY: AGRICULTURE & RURAL DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3

Focusing on food, hunger, agriculture and rural livelihoods in low- and middle-income countries, this course is a survey of nutrition, agriculture, and food policy issues. It is a course for non-specialists in agriculture who need to be able to work with agronomists and other specialists, in rural and community development.

PIA 2522 - GLOBAL ENERGY

Minimum Credits: 3
Maximum Credits: 3

The global energy policy course applies tools from economics, science, and policy analysis to address energy issues. We examine various energy sources in the us/eu/developing countries including oil, gas, nuclear, hydro, biofuels, solar and wind. We discuss how market failures and government policies influence the gaps between private and social costs of energy. We examine incentive policies for the adoption of renewable energy and overall benefits from restructuring towards a greener economy. We examine the role of international trade, investment, technology transfer and climate policy in increasing energy efficiency and renewable energy worldwide.

PIA 2715 - GIS FOR PUBLIC POLICY

Minimum Credits: 3
Maximum Credits: 3
A geographic information system (GIS) is a powerful tool for the public sector and used in a variety of disciplines. GIS builds on existing methods while offering new dimensions. This course provides students with a solid foundation of the principles and applications of GIS, an introduction to the desktop software ArcGIS, and demonstrates its uses in the public sectors. Students utilize ArcGIS to analyze and display spatial and demographic data. The construction of policy is then predicated on analysis. Skills learned in core courses can be brought to this course and built upon. Students have the flexibility to focus on their particular area of interest within the public sector through project work. The course is taught via lecture and hands-on experience using the ArcGIS software.

Academic Career: GRAD
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: Graduate School of Public and International Affairs students only.

PUBHLT 1001 - INTRODUCTION TO GLOBAL HEALTH

Minimum Credits: 3
Maximum Credits: 3
This introductory course covers fundamental concepts in global public health, including determinants of health, key health indicators, global burden of disease, and the relationships among health status, education, and poverty, cross-cutting issues such as culture, ethical and human rights aspects of health, and key actors in global health will also be explored. A variety of teaching modalities will be employed throughout the course including lectures, guest speakers, case studies, class discussion, audio-visual presentations, and student presentations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: LVL: Soph or Jr or Sr

PUBHLT 1002 - SPECIAL TOPICS IN GLOBAL HEALTH

Minimum Credits: 3
Maximum Credits: 3
This course provides an in-depth look at selected global health issues at a population level. This includes exploration of the determinants of health associated with these issues, prevention and control strategies, and the interplay of behavioral, social, cultural, economic, and political factors that must be considered when addressing the issues. Topics are preselected by the instructor and may vary each term. Examples are accidents and injuries; chronic diseases such as cancer, diabetes, and mental illness; neglected tropical diseases; and reproductive health. In addition, students will be exposed to an array of issues through weekly discussion of current events in global health. A variety of teaching modalities will be employed throughout the course including lectures, guest speakers, case studies, class discussion, audio-visual presentations, and student presentations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: LVL: Soph or Jr or Sr

PUBHLT 1003 - INTRODUCTION TO PUBLIC AND GLOBAL HEALTH

Minimum Credits: 4
Maximum Credits: 4
This course is an introduction to public and global health in which students will learn and apply problem solving methodologies to analyze current public health issues from local, national, and global perspectives. Through detailed case studies of communities in the US and across the world, students will gain an in-depth understanding of how biological, behavioral, environmental, and public policy components come together to determine the health of populations. Also, working individually and in groups, students will recommend interventions and evaluation methods to address specific problems. This course has no formal prerequisites. It is intended only for students in the Pitt summer edge in public health and global health program.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: CREQ: BCHS 2509 or EPIDEM 2110 or PUBHLT 2015; LEVEL: SOPHOMORES, JUNIORS, SENIORS
PUBHLT 1004 - PUBLIC HEALTH EXPLORATIONS

Minimum Credits: 1  
Maximum Credits: 1
In this course, students will explore the varied and multidisciplinary aspects of public health by meeting once per week for (1) discussions with a variety of public health researchers, leaders, and field workers, or (2) field trips to local public health institutions. This course has no formal prerequisites. It is intended only for students in the Pitt summer edge in public health and global health program.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: CREQ: BCHS 2509 or EPIDEM 2110 or PUBHLT 2015; LEVEL: SOPHOMORES, JUNIORS, SENIORS

PUBHLT 1005 - PUBLIC HEALTH RESEARCH AND PRACTICE

Minimum Credits: 4  
Maximum Credits: 4
This course will provide an internship and/or shadowing opportunity with a Pitt public health faculty member. Students will work individually or in pairs with a faculty mentor. There will be opportunities for laboratory, quantitative, or social science research, opportunities to work in the field with community organizations or health agencies, and opportunities to work in clinical settings. This course has no formal prerequisites. It is intended only for students in the Pitt summer edge in public health and global health program.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: CREQ: BCHS 2509 or EPIDEM 2110 or PUBHLT 2015; LEVEL: SOPHOMORES, JUNIORS, SENIORS

PUBSRV 0020 - INTRODUCTION TO PUBLIC SERVICE

Minimum Credits: 3  
Maximum Credits: 3
This course introduces students to the fields of public service. In addition to addressing the concept of public service, it provides students the opportunity to explore the various public service options. These include elected and appointed positions, volunteerism, and work in non-profit organizations. An effort will be made to give students an appreciation of the skills and talents required to effectively serve in these capacities. Classes will involve presentations by a variety of public service professionals, field visits and service learning opportunities.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PUBSRV 0030 - PUBLIC POLICY PROCESS

Minimum Credits: 3  
Maximum Credits: 3
Objective: to stimulate independent, critical and creative thinking about processes of public policy formulation in complex and rapidly changing environments. Course provides an approach to understanding interrelationships between elements of public policy (policy problems, policy alternatives, policy actions, policy outcomes, policy performance) and specific skills necessary to formulate and implement policies (problem identification, forecasting, recommendation, monitoring, and evaluation).

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

PUBSRV 0040 - PUBLIC SERVICE TECHNOLOGIES

Minimum Credits: 3  
Maximum Credits: 3
This course presents an overview of existing and emerging technologies that may be used by public service professionals to accomplish
organizational goals or improve efficiency and effectiveness. Through discussions, readings, internet research and hands-on computer exercises, it will emphasize current information technology concepts, issues, and practices in the United States. In addition, it will provide students with a technology skill set utilized in subsequent courses and in the practice of a public service career.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PUBSRV 0050 - ETHICS AND ACCOUNTABILITY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
In the United States, there exists a fundamental agreement between the people and their government about how the social contract should be carried out. This understanding has led to our current contract notions about public service. Ethics and accountability examines the history, politics and execution of public service as it has developed and is currently experienced. Practicing professionals and community leaders will visit the class throughout the term and group work, student-led discussions and case studies will be at the center of the learning environment.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PUBSRV 1100 - PRACTICES IN PUBLIC ADMINISTRATION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Examines practices, issues and concepts in governmental administration. Course deals with such matters as current and best approaches to administration, administration and politics, organizational structure and behavior, and decision making.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PUBSRV 1110 - FINANCIAL MANAGEMENT IN THE PUBLIC SECTOR**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Participants are provided with an overview of the financial management concepts and practices. Stress is put on the strengths, weaknesses, and critical roles financial management plays in aiding public service managers to better realize their programmatic goals and objectives.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PUBSRV 1120 - HUMAN RESOURCES MANAGEMENT IN THE PUBLIC SECTOR**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is an introductory survey of the understandings and skills needed by both managers and employees to cope with the myriad human resources management systems in public sector organizations. Specific topics include the history and evolution of human resources management, the legal environment, human resources planning, position classification and compensation, recruitment, promotion, termination, performance evaluation and training. Integrated with these topics will be the technical and legal concerns of labor relations and equal employment opportunity.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**PUBSRV 1130 - PLANNING IN THE PUBLIC SECTOR**
This course will introduce the profession of urban planning through a review of the historical development of cities. With this framework we will look at the actual work of the planner: data gathering, analysis, policy, public process and politics. We will address the relation between the physical nature of cities and the quality of community that develops. Course underscores the importance of physical and geographic determinants to city growth, and makes the connection between democratic values and city development policy.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

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**PUBSRV 1200 - PRACTICES OF NON-PROFIT MANAGEMENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Introduction to forms of non-profit organizations and their roles in American society. Course evaluates how non-profit organizations define their policy and service roles and examines the context of how they are organized, governed, financed, staffed, and managed. Other topics to be examined are law and philanthropy, voluntarism, strategic planning and marketing, training and developing boards, staff and volunteers, and ethical behavior.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

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**PUBSRV 1210 - FINANCIAL MANAGEMENT OF NON-PROFIT ORGANIZATIONS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students are provided with an overview of the theories, practices and critical role of financial management in the non-profit sector. Major attention is focused on the tools and techniques that are necessary for the manager to effectively achieve an expanding mission in the face of a difficult and competitive revenue raising environment.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

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**PUBSRV 1220 - HUMAN RESOURCE MANAGEMENT OF NON-PROFIT ORGANIZATIONS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is an introductory survey of the understandings and skills needed by both managers and employees to cope with the myriad human resources management systems in non-profit organizations. Specific topics include the history and evolution of human resources management, the legal environment, human resources planning, position classification and compensation, recruitment, promotion, termination, performance evaluation and training. Integrated with these topics will be the technical and legal concerns of labor relations, equal employment opportunity and volunteer management.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

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**PUBSRV 1230 - FUNDRAISING FOR NON-PROFIT ORGANIZATIONS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is intended to help students become familiar with the major sources of financial resources available to support the program activities of non-profit organizations. It will introduce students to the basic component of grant proposals and other revenue raising techniques i.e. plan giving, general appeals and endowments.

**Academic Career:** Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1300 - LEGAL ISSUES IN PUBLIC SERVICE

Minimum Credits: 3
Maximum Credits: 3
Examines impact of law upon public service and manner in which legal implications condition formulation, adoption, and implementation of programs.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PUBSRV 1305 - HEALTH, LAW AND ETHICS

Minimum Credits: 3
Maximum Credits: 3
This course covers the legal and ethical issues in the health care professions. Students acquire an understanding of the balances between governmental authority and responsibility and personal rights and responsibilities in the public health arena. Topics include: basic constitutional principles, conflicts of interest, the nature of organization-practitioner relationship, rights of practitioners, professional and institutional liability, government regulatory methods, and issues concerning informed consent, confidentiality of health information, termination of care, and medical-moral matters.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1310 - DIVERSITY ISSUES IN PUBLIC SERVICE

Minimum Credits: 3
Maximum Credits: 3
This course analyzes public service from the perspective of minorities and women. The minorities examined are black American men and women, with lesser attention given to ethnic minorities, those over 45 and the handicapped. The experience and aspirations of these several minorities will be examined in terms of how minority culture illuminates the nature of public service.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1315 - MANAGING PROJECTS AND CONTRACTS

Minimum Credits: 3
Maximum Credits: 3
This course provides students with the fundamentals of project management by examining key components of the project cycle, such as: problem identification, results-based planning and design strategies, implementation and scheduling strategies, monitoring and performance indicators, impact learning with evaluation studies, and data management and reporting systems. Students will also be introduced to team building concepts, managing project budgets, writing scopes of work, and legal issues in the management of contracts and administration of grants.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PUBSRV 1320 - GEOGRAPHIC INFORMATION SYSTEMS IN THE PUBLIC SERVICE

Minimum Credits: 3
Maximum Credits: 3
This course introduces the student to geographic information systems software. In addition to familiarizing the student with the software, each
student will apply that knowledge to a particular public problem selected by the student in consultation with the instructor. As this is a hands-on
course, the format is a combination of lecture and lab/computer time.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1340 - STRATEGIC PLANNING PUBLIC SECTOR

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce students to strategic planning and its application to the management of public organizations. As an introductory
undergraduate course, students will be expected to gain a broad understanding of strategic planning and how it can be applied to mid and long term
management of public organizations. Students will be introduced to the terminology used in strategic planning, several types of planning models,
their steps and organization, and the importance of mission, vision, and values in strategic planning.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1390 - THEORIES OF LEADERSHIP

Minimum Credits: 3
Maximum Credits: 3
This course is designed to acquaint students with multiple theories and practices associated with effective leadership. In answering the question,
"what is leadership", it examines such theories as situational, participative, transformational, and servant leadership. It also addresses those leadership
and administrative skills and practices usually associated with effective community organization and professional management.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1410 - HOUSING AND COMMUNITY DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
This course examines social and economic issues relating to housing and community development. Particular attention is given to the relationship
between home ownership and sustainable development. This includes exploring the rules and practices affecting credit worthiness, community
reinvestment, redlining, public and private sector partnerships and other public policy initiatives.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1425 - PRINCIPLES OF HOMELAND SECURITY

Minimum Credits: 3
Maximum Credits: 3
This course examines the new problems facing our domestic public service and justice personnel -- the borderless world of globalization and
technology. Attention is paid to problems of terrorism, incident management systems, violence incident response procedures, planning for violence,
changing federal, state, and local roles and response planning, weapons of mass effects, mass casualty programs, crime scene operations, technology
and emergency responses, the evolving role of the intelligence community, and government, private, and non-government security issues.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1430 - TRIAL ADVOCACY 1
Minimum Credits: 3
Maximum Credits: 3
This course examines the mechanics of American civil and criminal litigation in both nonjury and jury trials. Topics include basic case analysis, effective advocacy skills, appropriate professional conduct, trial preparation, direct and cross examination of lay witnesses, and an introduction to the legal concepts of relevance and hearsay within the context of the federal rules of evidence. Students will participate in intensive class discussions and in-class presentations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PUBSRV 1435 - TRIAL ADVOCACY 2

Minimum Credits: 3
Maximum Credits: 3
This course further examines more advanced topics relating to the mechanics of American civil and criminal litigation in both nonjury and jury trials. Topics include the authentication and use of evidentiary exhibits such as documents, real evidence and demonstratives, the direct and cross examination of expert witnesses, character evidence, opening statements, and closing arguments. Students will participate in intensive class discussions and in-class presentations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

PUBSRV 1455 - LAW, ETHICS AND PUBLIC POLICY IN THE MASS MEDIA

Minimum Credits: 3
Maximum Credits: 3
This course examines a variety of public policy issues as those issues are impacted by the role and significance of the news and entertainment media. It explores mass media law and policy, with particular attention to regulatory practices.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

PUBSRV 1900 - INTERNSHIP SEMINAR

Minimum Credits: 1
Maximum Credits: 6
A supervised placement with a government or non-profit agency, or private sector organization undertaking public services. Students will meet several times during the semester with other students to review and discuss their public service experiences. CGS Public Service Majors and Non-Profit Management Certificate students are required to complete a minimum of a 3.0 credit internship. This internship course is optional for Public Service Minors and may vary from 1.0-6.0 credits. Instructor approval is required prior to enrolling in this course.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

PUBSRV 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Allow advanced student to pursue topics and research of special interest, which are not otherwise available. Course requires construction of plan of study or research on topic selected and approval of instructor who will supervise work.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis
PUBSRV 1910 - INSTITUTE OF POLITICS INTERNSHIP/SEMINAR

Minimum Credits: 4
Maximum Credits: 4
While students are obtaining first-hand internship experience working with an official directly involved in policy making for the Pittsburgh region, they will learn in this seminar to analyze the policy-making process as an example of social problem-solving. They will learn the issues confronting the region; they will study the policy-making process; finally they will analyze the method of participant observation.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

BUSQOM 0050 - QUANTITATIVE METHODS

Minimum Credits: 3
Maximum Credits: 3
Provides the foundations for two basic business disciplines; optimization and simulation. Various modeling concepts which have origins and have found wide applications in functional areas such as finance, marketing and operations will be studied in depth. The topics studied are linear programming; models of "go/no go" decisions and location decisions; "what if" analysis; decision analysis and multiple criteria decision making models; queuing models and statistical foundations to simulate business systems-input/output analysis.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: STAT 1000 or 1040 or 1100 or 1131 or MGMT 0024 or ECON 0204; LVL: So, Jr, Sr; PROG: College of Business Admin

BUSQOM 1070 - OPERATIONS MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Provides foundations for managing operations technology manufacturing & service & discussion of operations management of conversion process. Field is centered on the fundamental problems of managers taking raw materials & transforming them efficiently/effectively into products resulting in satisfied customers. Topics: bottleneck & capacity analysis, capacity expansion; decoupling workstations-buffers versus internal & external variability; economies of scale in materials distribution; reorder point computations; distribution & logistics; & scheduling res; GT, JIT, CIM & FMS.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSQOM 0050; LVL: So, Jr, Sr; PROG: College of Business Admin

BUSQOM 1080 - DATA ANALYSIS FOR BUSINESS

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to enhance the statistical and analytical skills of Pitt Business students, who have already taken the required STAT 1100 or STAT 1000 course, to the level necessary for them to deal with Data Mining and other essential material in the Business Analytics Certificate. The course should also be of interest to students exploring the analytical parts of other areas, such as marketing. The goals of the course are to: (1) cover material not currently treated in STAT 1100, but which is preparatory to Data Mining; (2) provide software skills in statistical packages used in business, such as SPSS, SAS, or R; and (3) provide experiential exposure to business applications of the material.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: STAT 1000 or 1100 (Min Grade 'B')

BUSQOM 1085 - APPLIED BUSINESS ANALYTICS PROJECT
BUSBQOM 1090 - APPLIED OPTIMIZATION AND SIMULATION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

The purpose of this course is to enhance the problem-solving skills of Pitt Business students to the level necessary for them to deal with complex decision problems using optimization and simulation. Building on the foundation provided in the required BUSQOM 0050 Quantitative Methods course, the topics herein will include linear, nonlinear, integer, multiple objective and stochastic optimization. Simulation topics will include both spreadsheet simulation and process simulation. The goals of the course are to: (1) provide advanced modeling skills in optimization and simulation; (2) provide skills in software packages used in business, such as the Analytic Solver Platform and Arena; (3) get practice on asking the right questions, on dealing with problem complexity, on critical thinking and on gleaning insights to complex problems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSQOM 0050; MIN GRADE 'B'

BUSBQOM 1715 - OPERATIONS MANAGEMENT INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
An independent study course for students desiring to pursue in greater depth a specific set of operations management issues or problems to which they have been introduced in other operations management courses. The course involves directed reading and research under the guidance of a full-time faculty member.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

BUSBQOM 1720 - OPERATIONS MANAGEMENT INTERNSHIP

Minimum Credits: 1
Maximum Credits: 3
The operations management internship provides business credits for project assignments that augment a professional operations management work experience.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

BUSBQOM 1725 - GLOBAL SUPPLY NETWORKS AND MANUFACTURING CULTURES IN LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
The course provides students with the fundamentals of international supply chain methods with a special focus on Latin America and Uruguay. It will feature a 2-week study visit to Uruguay where students can place their understanding of those concepts within a cultural context. The course involves significant teamwork and allows students to complete an in-depth analysis of the global supply networks and manufacturing culture in Latin America with Uruguay as a reference point.

Academic Career: Undergraduate
Course Component: Independent Study
BUSQOM 1735 - ENGINEERING AND BUSINESS COLLABORATION IN INDIA: PRODUCT AND INNOVATION VALUE CHAINS

Minimum Credits: 3
Maximum Credits: 3

The course focuses on the study of modern engineering and business principles, methods, and tools, within the context of the Indian environment. The three areas of study are: manufacturing systems, service engineering operations, and call centers. Site visits showcase challenges and opportunities available at the corporate and individual levels in this rapidly growing economy. Societal impacts of new technologies and rapid expansion of engineering industries in India are noted. Students may utilize this forum to analyze and visualize service meeting challenges and opportunities around the world.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

BUSQOM 1765 - PROJECTS IN GLOBAL SUPPLY CHAINS

Minimum Credits: 3
Maximum Credits: 3

This project course is an opportunity for students to apply their management skills and develop their understanding of the challenges of supply/value chain management. In this course a select group of students will work closely with a faculty member to create a specific deliverable that meets the needs of a client organization. This course allows students to engage in experiential learning through a project course that specializes in a topic that may touch one or several of these areas: supply chain management, value chain management, supplier diversity and/or global sourcing.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade
Course Requirements: PREQ: BUSQOM 1730; PLAN: Global Management (GLMGT-BSBA) or Supply Chain Mgt (SCMCBA-CR1)

BUSQOM 1790 - SUPPLY CHAIN MANAGEMENT INTERNSHIP

Minimum Credits: 3
Maximum Credits: 3

The supply chain management internship provides business credits for project assignments that augment a professional supply chain management work experience.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit
Course Requirements: Restricted for College of Business Administration

QUECH 0101 - QUECHUA 1

Minimum Credits: 4
Maximum Credits: 4

The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

QUECH 0102 - QUECHUA 2
Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0441 or QUECH 0101; MIN GRADE: 'C' FOR LISTED COURSES

QUECH 0103 - QUECHUA 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0442 or QUECH 0102; MIN GRADE: 'C' FOR LISTED COURSES

QUECH 0104 - QUECHUA 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0443 or QUECH 0103; MIN GRADE: 'C' FOR LISTED COURSES

QUECH 0131 - INTENSIVE KICHWA LANGUAGE AND CULTURE 1

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

QUECH 0132 - INTENSIVE KICHWA LANGUAGE AND CULTURE 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

QUECH 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

QUECH 1905 - UNDERGRADUATE TEACHING ASSISTANT IN QUECHUA

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

QUECH 1909 - SPECIAL TOPICS IN QUECHUA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

REHSCI 1000 - PRINCIPLES OF RESEARCH METHODOLOGY

Minimum Credits: 3
Maximum Credits: 3
The study of the nature of research and the applications of the scientific approach in the research procedures. The course focuses on concepts, design techniques and interpretations, as well as limiting factors and ethical considerations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (STAT 0200 or 1000 or 1020 or 1131) or (PSY 0201 or 0270); MIN GRADE: ‘C-’ for listed courses; PLAN: Rehabilitation Science (BS, BSH, BPH)

REHSCI 1018 - SURVEY OF HEALTH AND REHABILITATION PROFESSIONS

Minimum Credits: 2
Maximum Credits: 2
Course will employ an interdisciplinary faculty team to introduce students to health science professions in physician assistant studies, physical therapy, athletic training, occupational therapy, speech language pathology and audiology, rehabilitation counseling, health information management, rehabilitation technology, emergency medicine, and prosthetics and orthotics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

REHSCI 1200 - HUMAN ANATOMY

Minimum Credits: 3
Maximum Credits: 3
This course uses lecture and laboratory experiences to teach the anatomical structures of the human body. Content focuses on gross human anatomy with particular reference to the musculoskeletal, nervous, cardiovascular and respiratory systems. Emphasis has been laid on application of knowledge of human anatomy in diagnostics of commonly encountered diseases/injuries. Students are encouraged to use their knowledge of anatomical structures learned in class to create such clinical scenarios as a part of learning.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: [(BIOSC 0150 or 0170 or 0716) or (BIOL 0110) or BIOENG 1070] and [(BIOSC 0050 or 0058 or 0070 or 0715) or (BIOENG 1070) or (BIOL 0101 or 0111)] or BIOSC 0190; CREQ: REHSCI 1201; MIN GRADE: 'C-' ; PLAN: Rehabilitation Science or Athletic Training (BS, BSH, BPH)

REHSCI 1201 - HUMAN ANATOMY LAB

Minimum Credits: 1
Maximum Credits: 1
This course uses lecture and laboratory experiences to teach the anatomical structures of the human body. Content focuses on gross human anatomy with particular reference to the musculoskeletal, nervous, cardiovascular and respiratory systems. Emphasis has been laid on application of knowledge of human anatomy in diagnostics of commonly encountered diseases/injuries. Students are encouraged to use their knowledge of anatomical structures learned in class to create such clinical scenarios as a part of learning.

Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: Letter Grade
Course Requirements: CREQ: REHSCI 1200

REHSCI 1205 - HUMAN PHYSIOLOGY

Minimum Credits: 4
Maximum Credits: 4
This basic human physiology course covers general physiological processes, muscles, blood and lymph, body fluids, renal function, respiration, metabolism, and the nervous, gastrointestinal, cardiovascular and endocrine systems. Problem-based formats will be introduced with particular reference to those problems seen in clinical settings.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: [(BIOSC 0150 or 0170 or 0715) or (BIOL 0110) or (BIOENG 1070)] and [(BIOSC 0050 or 0058 or 0070)] or (BIOENG 1070) or (BIOL 0101 or 0111)]; MIN GRADE: 'C-' for listed courses; PLAN: Rehabilitation Science (BS, BSH, BPH)

REHSCI 1210 - NEUROSCIENCE

Minimum Credits: 4
Maximum Credits: 4
This course studies the basic structure and function of the central and peripheral nervous system. There is an emphasis on the effects of lesions of the nervous system on human function and disability.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (REHSCI 1200 and 1205) or (BIOSC 1250 or 1070) or (NROSCI 1250) or (NUR 0013 and 0003); MIN GRADE: 'C-' for listed courses; PLAN: Rehabilitation Science (BS; BS-H; BPH)

REHSCI 1215 - EXERCISE PHYSIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the effects of exercise in preventing and treating disability, in optimizing the rehabilitation process, and in maintaining the health of those with disabilities. The course emphasizes the effects of exercise on the various body systems, including the cardiovascular, neuromuscular, and musculoskeletal, in individuals with disabilities.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: (REHSCI 1205) or (BIOSC 1250 or 1070) or (NROSCI 1250) or (NUR 0013 and 0003); MIN GRADE: 'C-' for listed courses; PLAN: Rehabilitation Science (BS; BS-H; BPH)
REHSCI 1217 - ADVANCED HEALTH ASSESSMENTS AND EXERCISE PRESCRIPTION

Minimum Credits: 3  
Maximum Credits: 3  
The purpose of this course is to teach students the knowledge and skills necessary for performing health assessments and designing exercise programs for a variety of populations. Students will learn how to perform health screening and how to properly assess fitness parameters such as body composition, cardiorespiratory fitness, muscular fitness, and flexibility. Students will also learn how to design and implement exercise programs for healthy individuals, as well as those with chronic health conditions or disease. The pathophysiology of the disease process will also be discussed. Potential populations of interest include active and sedentary adults, youth, older adults, pregnancy, osteoporosis, arthritis, cancer, cardiopulmonary diseases, obesity, eating disorders, and depression.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PREQ: REHSCI 1215 (MIN GRADE "C-"); PLAN: Rehabilitation Science (BS, BPH, BS-H)

REHSCI 1218 - EMERGING BIOMEDICAL TECHNOLOGIES

Minimum Credits: 3  
Maximum Credits: 3  
The purpose of this course is to provide the students with an understanding of stem cell biology, tissue engineering, and related applications involved in rehabilitation sciences and regenerative medicine. The course material is designed to aid students considering a future as researchers in biomedical sciences laboratories or biotechnology research and development. It will provide digests of the latest research technologies and clinical applications in these fields. Students will be encouraged to synthesize concepts aimed to test solutions and therapies to improve human health by use of modern biomedical technologies. The lecture and discussion format gives students a broad background and the opportunity to apply critical thinking skills to recent published findings.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

REHSCI 1220 - KINESIOLOGY AND BIOMECHANICS

Minimum Credits: 3  
Maximum Credits: 3  
The course will cover the functional anatomy and biomechanics of the major joints of the human body and the application of mechanics to describe and analyze normal and pathological human movement. Students will be analyzing muscle function and joint motions involved in an exercise or functional activity, palpating muscle groups and bony landmarks, testing the strength of a muscle group, and demonstrating exercises to stretch or strengthen various muscles.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: REHSCI 1200 and (PHYS 0101 or 0110 or 0140 or 0150 or 0174); MIN GRADE "C-" for all listed courses

REHSCI 1225 - INTRO TO REHABILITATION SCIENCE

Minimum Credits: 1  
Maximum Credits: 1  
This course will introduce students to the criteria on which they will be judged in the graduate school application process and topics related to professionalism. Recommended readings will prepare the student to develop basic skills for reading and interpreting research articles. Various researchers and clinicians from within the University of Pittsburgh and the University of Pittsburgh Medical Center will be invited to share their research studies and/or clinical experiences and perspectives.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: H/S/U Basis  
Course Requirements: PLAN: Rehabilitation Science (BS, BSH, BPH)
REHSCI 1230 - REHABILITATION ETHICS

Minimum Credits: 2
Maximum Credits: 2
This course explores ethical issues of: human value development, decision making, basic principles of health care, the nature of rights, confidentiality and management of health care information, professional gate keeping as a function of role fidelity, autonomy and paternalism, justice and the allocation of scarce resources, withholding and withdrawing life support, euthanasia, abortion, AIDS and health care practice, genetic science, and trans-cultural health. Students will work in teams to create presentations from these various topics for their colleagues. This is a highly interactive program of instruction and requires student be actively engaged in the learning process.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Rehabilitation Science (BS, BSH, BPH)

REHSCI 1235 - MEDICAL TERMINOLOGY

Minimum Credits: 1
Maximum Credits: 1
This course is designed to introduce students to the fundamentals of medical terminology. It includes word structure of basic medical and surgical terms and procedures, body parts and organs, body systems, selected medical specialties, and commonly used medical abbreviations and symbols. This course is a self-directed learning course, using a programmed text, with online quizzes (through Blackboard) and a final exam administered in a classroom.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

REHSCI 1240 - ISSUES IN HEALTH CARE

Minimum Credits: 3
Maximum Credits: 3
This course is intended as a survey of current health care issues in the United States and will focus on major trends, issues and problems facing health care professionals and policy makers. In particular, an overview of the US health care system, the role of government, its payers (public and private), health policy, regulatory and accrediting bodies, and an analysis of timely challenges and issues are discussed. Specific topics covered are intended to be representative (not all inclusive) of public and/or service delivery issues widely discussed in current literature. Class participation and assignments will focus on application of principles discussed to current and emerging issues.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Rehabilitation Science (BS, BSH, BPH)

REHSCI 1245 - HUMAN DEVELOPMENT

Minimum Credits: 3
Maximum Credits: 3
This course follows the development of individuals and highlights the role of rehab science professions from conception until the end of life. It combines theory, research, and practical applications from developmental psychology. Lecture topics include genetic influences on development; prenatal and birth factors; physical, cognitive, social, personality, and cultural variables that influence development across the life-span.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: PSY 0010 or 0101 or 0200; MIN GRADE "C-" for all listed courses

REHSCI 1250 - PATHOPHYSIOLOGY/HUMAN DISEASE
Minimum Credits: 4
Maximum Credits: 4
This course has been designed as an extension of Physiology, in an effort to provide pre-clinical students with a foundational scientific knowledge and conceptual understanding of pathophysiological processes. The course fundamentally focuses on general mechanisms of disease that are typically applicable to multiple body regions and/or organ systems. In addition to these general mechanisms, focus is also afforded to the pathogenesis of systemic conditions, again, due to their influence on the patient as a whole.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: REHSCI 1205 or (BIOSC 1250 or 1070) or NROSCI 1250 or (NUR 0013 or 0003); MIN GRADE "C-" for all listed courses; PLAN: Rehabilitation Science (BS or BS-H or BPH)

REHSCI 1255 - EPIDEMIOLOGY OF DISABILITY

Minimum Credits: 3
Maximum Credits: 3
Course focuses on the incidence and prevalence of impairments and disabilities in relation to age, gender, ethnic background, marital status, and living situation. Discussion will focus on the differences in these factors due to geographic variability (country where you live) as well as risk factors for diseases leading to various disabilities and any interventions that would modify them.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: [(STAT 0200 or 1000 or 1020 or 1131) or (PSY 0201 or 0270)]; MIN GRADE "C-" for all listed courses; PLAN: Rehabilitation Science (BS or BS-H or BPH)

REHSCI 1265 - PHARMACOLOGY IN REHABILITATION

Minimum Credits: 3
Maximum Credits: 3
This course serves as a foundation to general pharmacology, and begins with lectures on the general principles affecting drug response: drug absorption, distribution, metabolism and excretion. The major drug categories will then be discussed, with an emphasis on drug classification, mechanism of action, side effects (especially those that are predictable), and significant drug interactions. At the completion of this course, the student will be able to recognize and describe the action of prototype drugs in each major drug category, compare and contrast their action with other drugs in each category, and explain the role of those drugs in the mitigation, treatment, cure or prevention of disease in humans.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: REHSCI 1205 or (BIOSC 1250 or 1070) or NROSCI 1250 or (NUR 0013 and 0003); MIN GRADE "C-" for all listed courses; PLAN: Rehabilitation Science (BS or BS-H or BPH)

REHSCI 1275 - INTRO TO OCCUPATION SCIENCE

Minimum Credits: 3
Maximum Credits: 3
This course provides the foundation for understanding the role of activity and occupation in life-span human development by first considering human behavior in the absence of activity/occupation and then in the presence of activity/occupation. Consideration is given to the influence of inactivity and immobility on human systems (biologic, psychological and psychosocial) including knowledge of the disuse syndrome and the deleterious effects of living in stimulus deprived environments (such as nursing homes). The course also examines human behavior in the presence of activity/occupation including the role of movement and purposeful activity (occupation) as determinants of health.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PLAN: Rehabilitation Science (BS or BS-H or BPH)
REHSCI 1280 - PSYCH AND SOCCLGY OF DISABILITY

Minimum Credits: 3  
Maximum Credits: 3  
Topics covered in this course include individual and societal views of persons with disabilities; both historical and current trends are discussed including disability rights legislation, independent living options, access to everyday living activities, education, employment, assistive technology, and the need for ongoing advocacy, as described by various guest speakers with disabilities.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Rehabilitation Science (BS, BSH, BPH)

REHSCI 1285 - INTRO TO EVIDENCED-BASED REHAB

Minimum Credits: 3  
Maximum Credits: 3  
This course provides basic skills in reading, reviewing, and critiquing the research literature in the rehabilitation sciences. These skills will be applied to the relevant literature in diagnosis, prognosis and intervention strategies within the spectrum of rehabilitation science. Students will learn to generate relevant research questions and utilize an evidence-based medicine approach to the review, appraisal and synthesis of current research articles within the fore-mentioned areas. The course will culminate in an individual review project aimed at the development and resolution of one particular research question, using the best, current available literature. A basic understanding of research methods, design and or statistics is required.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Rehabilitation Science (BS or BS-H or BPH); PREQ: REHSCI 1000 or PSY 0035 or SOC 0230

REHSCI 1290 - PRACTICAL ISSUES IN DISABILITY

Minimum Credits: 3  
Maximum Credits: 3  
This course will review the natural progression of several age and non-age related physical disabilities such as Alzheimer's and Dementia, Parkinson's disease, CHF, COPD, DM, Spinal Cord injury, and Multiple Sclerosis (subject to change). When possible, individuals with disabilities are invited to participate in classroom discussions to share their first-hand experiences of living with a disability. This course will likely include an observational experience outside the classroom. This may include traveling to someone's home with a disability and/or their place of employment via public or a student's private mode of transportation. Additional details will be reviewed on the first day of class.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Rehabilitation Science (BS, BPH, BPH)

REHSCI 1292 - DIVERSITY AND CULTURAL ISSUES IN HEALTH, DISABILITY AND REHABILITATION

Minimum Credits: 3  
Maximum Credits: 3  
This course provides a forum for exploring issues of diversity and multiculturalism as they affect both daily interactions and professional practice in health care and rehabilitation. In this course students will build a greater understanding of: personal culture; how factors of culture and diversity influence an individual's health, living needs, and response to stress; international concepts of disability and health & rehabilitation services; and globalization and its relationship to rehabilitation. In addition, students will learn how to apply concepts of cross-cultural competence and intercultural communication to clinical services and program development.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Rehabilitation Science (BS, BSH, BPH)
REHSCI 1293 - INTER-DISCIPLINARY SERVICE LEARNING

Minimum Credits: 3
Maximum Credits: 3
This course provides a forum for exploring the practice and effect of providing inter-disciplinary health care in rehabilitation settings.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PLAN: Rehabilitation Science (BS or BS-H or BPH)

REHSCI 1295 - FIELD EXPERIENCE

Minimum Credits: 1
Maximum Credits: 3
Designed to fulfill the assistive technology in rehabilitation certificate field experience requirement. This course provides an opportunity to interact with assistive technologies, persons who use assistive technologies and with assistive technology researchers and providers. The student will work with the Field Experience Coordinator to make arrangements with a clinical facility and will work with a Faculty Advisor to develop a set of objectives for this experience. The student will be expected to participate a total of 45 hours per credit hour sought. Grade will be determined by the Faculty Advisor based on evaluation by the clinical facility and student's internship journal, a written summary of the clinical experience, and if more than 1 credit sought, a research paper. Students are required to complete online training modules and a physical exam, including documentation of up-to-date immunizations and TB test prior to registration. Other policies may apply based on the chosen field experience site.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis

REHSCI 1296 - ASSISTIVE TECHNOLOGY IN REHABILITATION FIELD EXPERIENCE

Minimum Credits: 1
Maximum Credits: 3
Designed to fulfill the assistive technology in rehabilitation certificate field experience requirement. This course provides an opportunity to interact with assistive technologies, persons who use assistive technologies and with assistive technology researchers and providers. The student will work with the Field Experience Coordinator to make arrangements with a clinical facility and will work with a Faculty Advisor to develop a set of objectives for this experience. The student will be expected to participate a total of 45 hours per credit hour sought. Grade will be determined by the Faculty Advisor based on evaluation by the clinical facility and student's internship journal, a written summary of the clinical experience, and if more than 1 credit sought, a research paper. Students are required to complete online training modules and a physical exam, including documentation of up-to-date immunizations and TB test prior to registration. Other policies may apply based on the chosen field experience site.
Academic Career: Undergraduate
Course Component: Clinical
Grade Component: H/S/U Basis
Course Requirements: PLAN: Assistive Technology in Rehab (ATR-CR2)

REHSCI 1297 - CROSS-CULTURAL INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
Designed to provide an opportunity to fulfill the RS program global citizenship requirement through extensive cross-cultural immersion and independent study. Students will draw from previous cross-cultural experiences or will work with their independent study faculty advisor to identify an appropriate community service agency with which to volunteer. Additional academic work will help student identify the characteristics of their own culture and learn about the culture of the community in which they are working, as well as the issues affecting its members' health including understanding and treatment of disabilities. Academic credits will be assigned according to number of hours spent in the community and academic work completed.
Academic Career: Undergraduate
Course Component: Independent Study
REHSCI 1299 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Provides advanced students an opportunity to explore in depth and area of particular interest to them. It is the student's responsibility to find a faculty member willing to undertake such a tutorial.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

RELGST 0025 - MAJOR BIBLICAL THEMES

Minimum Credits: 3
Maximum Credits: 3
An examination of the Jewish and Christian experience of God and the coherent use of major themes throughout the Jewish and Christian Bibles.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis

RELGST 0083 - MYTHOLOGY IN THE ANCIENT WORLD

Minimum Credits: 3
Maximum Credits: 3
This course examines in cultural context the traditional stories--myth, legend, and folktale--of the ancient Greeks and Romans. Theories drawn from various disciplines are critically evaluated. Attention to connections with ritual practice and to expression in daily life, art, architecture, etc.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 0084 - MYTH IN ANCIENT WORLD/Writing Practicum

Minimum Credits: 1
Maximum Credits: 1
Writing practicum for students taking RELGST 0083 as a writing course.
Academic Career: Undergraduate
Course Component: Credit Laboratory
Grade Component: LG/SNC Elective Basis

RELGST 0090 - MYTH IN THE ANCIENT NEAR EAST

Minimum Credits: 3
Maximum Credits: 3
The myths of the ancient Near East are among the earliest written interpretations of the world and human existence. They are also among the most enduring, although they have only been unearthed in the last 200 years. In this course, we read myths from ancient Mesopotamia, Ugarit, and Israel. We study the myths as literary works, representative of the ideas and issues of the original cultural context in which they were shaped. These myths offer insight into the religious mentality of the ancient Near East, as well as societal and political issues. We examine themes such as the presentation of the life of the gods, the relationship between the human and divine worlds, the issues of mortality and immortality, existence, fertility, kingship, and ethics. The primary goal of this course is to better understand these myths as they existed and developed in their ancient settings. Of course, because the myths are expressions of human thought, we may find that in studying them we also come to better understand ourselves.
Academic Career: Undergraduate
RELGST 0105 - RELIGIONS OF THE WEST

Minimum Credits: 3
Maximum Credits: 3
This course is a historical introduction to the religious traditions that developed in ancient Near East and the Mediterranean. Our major emphasis is on the history of the religious traditions that emerged in late antiquity which continue to as the major monotheistic religions: Judaism, Christianity and Islam. We focus on key concepts, historical developments, and contemporary issues. Throughout the course, we also examine interactions among these religious traditions and will make use of documentary film and sacred art to illustrate. In the final segment of the course we examine the issue of secularization and the rise of the category of the non-believer, or "none." The course also serves as an introduction to the academic study of religion and provides a foundation for further coursework in Judaism, Christianity, and Islam. No prior knowledge of any of the religions studied is expected or assumed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 0115 - BIBLE AS LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This introductory course acquaints students with what is in the bible and provides background information drawn from various disciplines about the elements and issues that give it its distinctive character. Attention is necessarily given to its religious perspectives, since they govern the nature and point of view of the biblical narratives, but no specific religious view is urged.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

RELGST 0135 - CHRISTIAN BIBLE

Minimum Credits: 3
Maximum Credits: 3
An introduction to the text of the Christian bible.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 0283 - US AND THE HOLOCAUST

Minimum Credits: 3
Maximum Credits: 3
With increasing interest in the Holocaust in Europe, this course focuses on the American side of the Atlantic - on issues of anti-Semitism and anti-immigrant sentiment in this country and on America's response to the holocaust. We will also look at some post-Holocaust issues as well.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 0305 - CLASSICS OF CHRISTIAN THOUGHT

Minimum Credits: 3
Maximum Credits: 3
An introduction to some of the major Christian thinkers and their principal themes in the medieval and modern period.
Academic Career: Undergraduate
RELGST 0405 - WITCHES TO WALDEN POND

Minimum Credits: 3  
Maximum Credits: 3  
Why did the prosecution of witches become a priority for the Puritan rulers of New England? What religious ideals convinced Henry David Thoreau to lead a life 'off the grid' in Walden Pond? How did non-Protestant immigrants make their way in the new nation? And how did religious rhetoric undergird the debates over slavery that led to the civil war? These are some of the questions that we will explore in this course, which traces the religious history of the United States from the era of colonization to through the Civil War.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RELGST 0415 - RELIGION IN MODERN AMERICA

Minimum Credits: 3  
Maximum Credits: 3  
The course examines the impact of religion as a moral, intellectual, and institutional force in America from 1865 to the present. Despite claims that the nation was becoming less religious, at least seven new religions were founded in the U.S. After the civil war, while millions of migrants from southern and eastern Europe brought large numbers of Catholics and Jews to challenge the dominance of protestants. We seek to understand how religions have both shaped and reflected economic, social, and cultural conditions in the united states. The course combines lecture with student discussion of religious conflicts and critical moments of cultural change, using primary sources and secondary interpreters. We also engage documentary films, slides, and local museums and historical sites. Major emphases include religious responses to intellectual, scientific, and economic change, including biblical criticism, evolutionary theory, immigration, urbanization, industrialization, Marxism, fascism, racism, and feminism. We conclude with questions about the present day: is the united states an exception for its high levels of religious behavior or is secularism on the rise?

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RELGST 0417 - THE BLACK CHURCH

Minimum Credits: 3  
Maximum Credits: 3  
An introduction to the course and historical development of the black church in America, its contribution to the social and religious progress of black people, black leadership, and struggles including the civil rights movement, black theology and other social movements.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RELGST 0435 - RELIGION, FILM AND LITERATURE

Minimum Credits: 3  
Maximum Credits: 3  
Alexis de Tocqueville famously called the United States "a nation with the soul of a church." Ironically, his observation refers to a nation whose constitution forbids the establishment of any official religious identity (while simultaneously allowing for "free," voluntary, religious "exercise"). The result—a vibrant spiritual marketplace characterized both by diversity and innovation and a clinging to traditional identities—has marked American culture and the broader stories it tells about itself. In this course we'll read closely in "secular" literary texts (including novels, graphic novels, short stories, poetry, drama, film, and music) with some attention to short, relevant readings in religious thought, practice, and history, aiming for two related objectives: 1) to observe the overt ways religions appear in and contribute to these texts—symbolically, rhetorically, schematically, etc.—and 2) to consider how presumably "secular" literature functions religiously, giving form and coherence to the ambiguities of American experiences, identities, and crises that remain in flux, constantly under revision. Readings will include both "classic" and more contemporary works by
Gwendolyn Brooks, Willa Cather, Mark Twain, Flannery O'Connor, William Styron, Oscar Hijuelos, Art Speigelman, August Wilson, James
McBride, the Cohen Brothers, and/or others.

**Academic Career:** Undergraduate

**Course Component:** Lecture

**Grade Component:** LG/SNC Elective Basis

**RELGST 0455 - INTRODUCTION TO ISLAMIC CIVILIZATION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course aims to introduce students to Islamic and Middle Eastern History from the time of the Prophet (ca. 600 C.E.) to the Iranian Revolution in 1979. We will proceed chronologically, focusing mainly on political events. However, a special emphasis will be given to the formation of the Islamic tradition, its evolution across different regions and cultures in time, and its interaction with other traditions. In the modern era, we will particularly explore the Islamic societies' political, cultural, and military encounter with the rising power of the West in the Middle East. In addition to the several historical processes and developments such as modernization, nation-building, Islamic fundamentalism and globalization, which have shaped the history of the Middle East in the last two centuries, our class discussions will also touch on the main theoretical perspectives that have stamped the studies of Islam and the Middle East. Here, concepts such as orientalism, defensive development, and modernity will constitute our main focus.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RELGST 0505 - RELIGION IN ASIA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course serves as an introduction to the major religious traditions of South and East Asia. During the course of the semester, we encounter Hinduism and Jainism; the native Confucian, Daoist (Taoist), and popular traditions of China; and the Shinto, folk and new religions of Japan. Buddhism, which originated in India but later spread to East Asia, is examined in its relation to the history of both Chinese and Japanese religions. We approach these traditions through lectures and discussion based on Chinese classical and popular literature, secondary scholarship, and films, which inform us about cultural and historical context, beliefs, practices, and personal experience. In the process we expect to learn something about the ways in which non-Western religious traditions see themselves and their world on their own terms, and to see how/if they can complement our own worldviews.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RELGST 0525 - RELIGION AND CULTURE IN EAST ASIA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Words have consequences. How a society defines "religion" and "culture" have much to say about how they balance individual freedom and collective responsibility. This course focuses on how religion has been and is practiced in East Asia in modern and contemporary times. We begin with an overview of the major religions in the region (e.g., Confucianism, Daoism, Buddhism, Shinto, folk traditions), and examine various themes to help us learn how religion influences the lives of individuals and the wider societies in which they live. Themes dealt with include the relationship between religion and politics and law; nationalism, terrorism, and secularization; gender, sexuality, and the family; healing, the environment, and ethical behavior; and the life cycle and ritual calendar year. By looking at how these issues unfold in modern China and Japan and at their global significance enable us to better understand how religion shapes our world.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RELGST 0710 - SOCIOLOGY OF RELIGION**
Minimum Credits: 3
Maximum Credits: 3
This course will compare and contrast major classical and modern sociological theories of religion, including discussion of the renewed focus on religion in mainstream, general theory. Attention will be narrowed to a focus on the relation between religions, states and individuals in comparative and historical perspective.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 0715 - PHILOSOPHY OF RELIGION

Minimum Credits: 3
Maximum Credits: 3
An examination of the arguments for and against the existence of God.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 0735 - WISDOM

Minimum Credits: 3
Maximum Credits: 3
We read and examine authors who address such basic questions as what can I know? What can I do? What can I hope for?
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1100 - ISRAEL IN THE BIBLICAL AGE

Minimum Credits: 3
Maximum Credits: 3
This course explores the history and development of the people of Israel in ancient times. What do we know about the Israelites and how do we know it? Using biblical texts and archaeological remains, students will learn about everyday life in ancient Israel, the role of class and gender, life-cycle events, religious festivals, political institutions, systems of belief, and famous personages in history and lore. The trajectory of the course will begin with the Near Eastern origins of the people, continue through the rise of the Israelite and Judahite monarchies, and end with the Second Temple commonwealth of Judea in the Persian and Hellenistic periods.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1102 - THE HISTORY OF GOD

Minimum Credits: 3
Maximum Credits: 3
Who invented God? The existence of a supreme, unitary, exclusive, invisible deity is one of the most influential ideas in the history of religion. Yet the history of the idea is shrouded in myth. Students in this course will use archaeological and textual evidence to trace the evolution of the God of Israel from a mountaintop deity of the southern Levant in the late second millennium BCE to a supreme deity worshipped by a small group of absolute monotheists based in Jerusalem in the mid-first millennium BCE. The cultural milieu in which God arose was marked by fluid and highly ritualized religious experiences, a kind of theological diversity that would be stamped out by the authors of the latest strata of the Hebrew Bible. In modernity the character of the ancient deity has proven problematic to theologians, particularly on issues of LGBT rights, women's rights, and the environment. Reinventions and renunciations of God in the modern context will be covered in the second part of the course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
RELGST 1112 - BIBLE AS LITERATURE 2

Minimum Credits: 3
Maximum Credits: 3
This course continues Bible as Literature, and students will examine various forms of biblical literature including prophecy, apocalyptic literature, wisdom literature, psalms and poetry, New Testament epistles, and narrative materials not covered in the earlier course. We will consider these works in terms of literary form and style, and in their origin historical and cultural contexts. We will also read non-biblical texts from the ancient world that help us to better understand the Bible as a literary work.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

RELGST 1120 - ORIGINS OF CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
This course presents a historical-critical investigation of Christian origins. Special attention is paid to varieties of 1st century Hellenistic and Palestinian Judaism within the Greco-Roman world. Primary readings include selected Biblical passages and apocrypha, 1st century historians and philosophers (Josephus, Tacitus, Suetonius, and Philo), the New Testament corpus (including Paul and the Pastorals), and selected readings from the Dead Sea Scrolls. In addition there will be assignments from various modern New Testament critics, historians, and theologians.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1130 - VARIETIES OF EARLY CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
This course will examine the many different and often competing forms of Christianity that existed during the first five centuries of our common era. We will include an historical survey of Mediterranean culture and society in the historical Roman Empire to help us understand the ways in which Christianity developed in relation to the philosophical, sociological, theological, and political environment of this period. We will also focus on the contribution of the early varieties of Christianity to modern Western views of the relationship between the individual body and society. The literature of this period represents a broad variety of beliefs and practices ranging from philosophical views of god and matter (and the nature of each), to notions of life-long celibacy.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1135 - ORTHODOX CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
This course is designed as an overview of the history, teachings and rituals of Orthodox Christianity in its multinational context. Geographically, this context refers primarily to southeastern Europe (aka the Balkans), Russia and the coastal areas of the eastern Mediterranean. The course examines specific historical experiences of Orthodox Christians, starting with Byzantine empire, through major historical shift in the life of the Christians under Ottoman rule and, finally, to the diverse experiences of various autocephalous churches under communism. Through lectures, readings, discussions, films, and a field trip to a local Orthodox church, students will gain an insight into and broaden their awareness of the multifaceted world of Orthodox Christianity, its spiritual practices, rich artistic, musical and ritual expressions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1142 - THE CONSTRUCTION OF EVIL IN WESTERN RELIGIOUS TRADITIONS
Why is there evil in the world and who or what is responsible for it? How can we reconcile a belief in a good God with the existence of evil? Even without the theological underpinning, in secular terms, evil poses a problem about the world’s intelligibility. This course undertakes a historical analysis of the various ways in which ancient and medieval minds pondered these questions and their solutions to the problem. We begin our survey with the monism of Hebrew Scriptures then move to the changes brought on by Persian culture and the Hellenization of the Mediterranean basin after the conquests of Alexander with the introduction of Dualism. Dualism is a theory or system of thought that recognizes two independent and mutually irreducible principles, which are sometimes complementary and sometimes in conflict. The course focuses on the polarities of "good" and "evil" (and the methods by which "evil" is defined), specifically highlighting the evolution of the emergence of the Devil in Judaism and Christianity and the social construction of good and evil in the Western tradition. At the same time, we consider the rationalization of "our" good against the evil of "others," or the issue of religious intolerance.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1143 - DEATH IN THE NAME OF GOD

The Roman empire understood Christianity to be an illegal and superstitious movement, and a threat to the traditions of their ancestors. Subsequently, many Christians were charged with the crime of "atheism," and put to death, as atheism was equivalent to treason. Who were these people who voluntarily embraced their own deaths as a vindication of their faith, and how did Rome justify their extinction? How were they understood by their pagan and Jewish neighbors? This course explores the cultural, political and religious context of Christian martyrs, beginning in second temple Judaism. We then analyze their stories (martyrologies), imperial transcripts and legislation, and examine the later (Christian) imperial legislation against "heretics." this background helps motivate discussions of contemporary "martyrs," such as "suicide bombers," the political ramifications of such behavior, who gets to decide if someone is a martyr, and reactions to the public spectacle of dying as the ultimate religious act.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1144 - CLASSICAL MYTHOLOGY AND LITERATURE

This course examines how authors of classical antiquity used the traditional figures and stories of their culture's mythology as material for works of literature.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1145 - GRECO-ROMAN RELIGIONS

This course will introduce students to religious texts and traditions in a formative era of Western civilization and culture. Our focus will be on the variety of religious expression in Greco-Roman culture, which flourished in the geographical area of the Mediterranean basin during the first five centuries of the common era. We consider debates about nature of the gods and access to them (through oracles, rituals, and magic), the emergence of the idea of the holy person, and a variety of religious traditions as expressed in prayer, ritual, and art, and religion and politics.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1148 - RELIGIONS OF ANCIENT EGYPT
This course introduces students to ancient Egyptian religious thought and practice with its massive temples, multitude of gods and goddesses and fascinating funeral rites. We explore the mythic cycle of Creation and the Osiris cycle of betrayal, revenge, death and rebirth, as well as the place of myriad local and minor deities within Egyptian mythology. We also consider the dynamics of the "monotheistic" revolution of Akhenaton. In the historical and cultural context of ancient Egypt, students encounter the interaction of sacred and secular, and the relationship between state cults and private worship by nobles and commoners alike. A special feature of the course includes group projects to design educational materials for the 'Egyptian Exhibit' for the Carnegie Museum. To that end, the course includes a session at the Carnegie Museum of Natural History.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### RELGST 1151 - DEATH IN THE MEDITERRANEAN WORLD

**Minimum Credits:** 3  
**Maximum Credits:** 3  
In many cultures, people sometimes ask fundamental questions about their existence, including, "what happens after we die?" This course will focus on the evolution of beliefs and rituals related to death and the afterlife in and around the ancient Mediterranean basin, including Egyptian, Greek, Etruscan, and Roman cultures. Using an interdisciplinary approach, we will combine methodologies from anthropology, classics, history, and religious studies. Topics to be covered include myths of the afterlife, books of the dead, magic and death rituals, funeral practices and paraphernalia (disposal of the dead), cults of the dead, divinization, heaven and hell, judgment, and the impact of christianization on the ancient understanding of death.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### RELGST 1160 - JERUSALEM: HISTORY AND IMAGINATION

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The holy city of Jerusalem is at the heart of the western religious imagination and of contemporary political conflict in the middle east. Traditionally it has been a center of religious pilgrimage, home to Israelite kings and Islamic caliphs. Today it is a cutting-edge urban center marked by stunning demographic diversity, a rapidly expanding economy, and an intractable political crisis. In this course, we will examine the history of the city-from its earliest days to today-with an eye toward its religious significance in Judaism, Christianity, and Islam. Special attention will be given to Jerusalem's changing urban fabric: its architecture, neighborhoods, natural resources, economy, and religious institutions.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

### RELGST 1170 - ARCHAEOLOGY OF ISRAEL-PALESTINE

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Is archaeology in a place like Israel-Palestine an objective science? In this course, we explore how past and present are linked as nation-states and religious communities utilize the archaeological record to mold identities and to forward certain narratives. Our focus will be on the major archaeological sites of Israel-Palestine, particularly in Jerusalem and its environs. We will explore the political and religious issues that have emerged from or surround their excavation. Archaeology in the Holy Land has long been driven by a desire to shed light on - or even authenticate - the Bible, while the "exotic Orient" was explored in the 19th and early 20th centuries through western expeditions and excavations that served to further colonial interests. These religious and political motivations persist even if their manifestations have shifted with time. Through site tours, museum visits, student-led discussions, talks with local experts, and even a day participating in an archaeological excavation, students will gain direct experience with the places that have aroused controversy because of their problematic relationship to biblical and other ancient texts and/or because of their location in politically contested space.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
RELGST 1210 - JEWS AND JUDAISM IN THE ANCIENT WORLD

Minimum Credits: 3
Maximum Credits: 3
This course covers the development of Classical Judaism from the Second Temple Period, beginning with the end of the Babylonian Exile in the 6th century BCE, and continues up through the emergence of Rabbinic Judaism, culminating with the redaction of the Babylonian Talmud in the 6th century CE. We cover both the major historical trends as well as the major religious developments. The course also introduces students to the major Jewish texts of both the Second Temple Period and the Rabbinic Period, emphasizing close readings of primary texts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1220 - JEWS AND JUDAISM IN THE MEDIEVAL WORLD

Minimum Credits: 3
Maximum Credits: 3
An introduction to the facets of medieval and early modern Jewish life.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1222 - JEWISH MYSTICISM

Minimum Credits: 3
Maximum Credits: 3
Mystical traditions in Judaism through the early modern period are assessed.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1228 - EXODUS AND PASSOVER

Minimum Credits: 3
Maximum Credits: 3
Study of exodus story and Passover holiday that develops from it including interpretations in Jewish and non-Jewish sources, development of the holiday and the ritual meal (Seder), changes in the rituals over time, and adaptations and uses of the story and holiday by different modern Jewish and non-Jewish movements and groups.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1232 - MODERN EASTERN EUROPEAN JEWRY

Minimum Credits: 3
Maximum Credits: 3
This upper level undergraduate course surveys the history of the historically most numerous portion of European Jewry from the medieval period to the present, emphasizing the modernization of east-central European Jews as minorities in the context of their host societies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1240 - JEWS AND THE CITY
Comedian Lenny Bruce riffed in 1963 that "If you live in New York or any other big city, you are Jewish. It doesn't matter even if you're Catholic; if you live in New York you're Jewish." In this course, we will discover why Lenny Bruce -- and so many other observers of Jewish life -- came to understand urbanity as a core component of the Jewish experience. We will begin our study of the Jewish encounter with urban life in the 19th century, as millions of Eastern European Jews migrated from the small villages of their birth to cities across the globe. This course will trace this Eastern European Jewish diaspora to urban destinations around the world, before training its lens on the Jewish encounter with American cities. We will pay close attention to how patterns of Jewish urbanization changed regionally and over time; how urbanization affected Jews' home-life, leisure time, religious practices and occupational choices; how differences in gender and class affected Jews' experiences in urban spaces; and how Jews interacted with other ethnic groups in diverse, urban environments. Delving into the history, built environment, and archival sources pertaining to the Jewish experience in Pittsburgh will provide us with a dynamic case study for this crucial relationship between Jews and the city.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**RELGST 1241 - GENDER AND JEWISH HISTORY**

How did a Jewish teenager named Henriette Herz become the belle of Berlin high society in the late 18th century? Why did 19th century Zionist thinkers like Theodor Herzl and Max Nordau think it so important to transform Jewish men into 'muscle Jews?' Why did Ray Frank, a Jewish woman from San Francisco who did not think that women should be rabbis, feel compelled to lead the first high holiday service ever held in Spokane, Washington? And how have trans* Jews challenged the conventions of contemporary Jewish life? These are some of the questions that we ask in gender in Jewish history, a course that places gender and its effects at the center of Jewish modernity. We take an international approach to this history, traveling through Europe, the Americas, and the Middle East to show how Jews negotiated gender identity and gender roles in numerous contexts and under varying political and social circumstances. In exploring such themes as religious practice, politics, education, anti-Semitism, work, and family, we see how gender indelibly marked every aspect of Jewish life over the past two hundred years.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**RELGST 1250 - JEWS AND JUDAISM IN THE MODERN WORLD**

Were we examine the specific challenges that the modern period posed to existing Jewish life and the nature of the responses made by Judaism to those challenges.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RELGST 1252 - HOLOCAUST HISTORY AND MEMORY**

The holocaust - that is, the genocide of six million Jews in Nazi-occupied Europe during World War II - was a critical event of the early twentieth-century that continues to resonate today. Our historical survey will look at the holocaust primarily through the experiences of its Jewish victims, though we will discuss some of the other groups, such as the Roma, disabled people, and gay men, who were also targeted and systematically murdered by the Nazis. Additionally, we will think about the perpetrators of the holocaust and the ideologies that led to the genocide, such as racism, nationalism, and antisemitism. Finally, we will move beyond the history of the holocaust to think about the ways that this event has been remembered and reconstructed by survivors, nations, institutions, museums, the arts, popular culture and the media. Looking at how institutions here in Pittsburgh commemorate the holocaust will offer us local, concrete examples of how people continue to grapple with this history.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
RELGST 1256 - MODERN ISRAEL AND PALESTINE

Minimum Credits: 3
Maximum Credits: 3
We trace the history of modern Israel from the idea of the return in the second half of the 19th century through the state of Israel today.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1258 - ISRAELI AND PALESTINIAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Reading literature from places of conflict provides an opportunity to go beyond headlines and gain insight into the day-to-day existence, desires, imaginings, and perspectives of the people who live there. Reading literature also reveals how religious values and practices become a part of everyday culture and how those values are embraced or challenged. This course will introduce students to the literature produced by Israeli and Palestinian authors, with a focus on how contemporary issues in Israeli and Palestinian society are depicted by writers from each culture. Topics will include: how these writers construct place; the role of religious texts in literature; conflicts and community within each society; how literature helped shape an Israeli national consciousness and a Palestinian national consciousness; how Israeli and Palestinian writers imagine the other; and the role of the Shoah in Israeli literature and the Nakba in Palestinian literature. The course will equally focus on developing students' academic and reflective writing skills. Students will produce a combination of literary analysis and self-reflective writing that uses techniques of creative nonfiction. Together, these writing assignments will help students respond to both the course texts and the cultural experience of studying in Israel-Palestine.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1260 - AMERICAN JEWISH EXPERIENCE

Minimum Credits: 3
Maximum Credits: 3
We analyze the Jewish experience in America since the middle of the 18th century.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1320 - MEDIEVAL HISTORY 1

Minimum Credits: 3
Maximum Credits: 3
Survey course in the social, political, economic and religious history of Europe from the Diocletian reforms to the year one thousand. Special attention to interpreting the primary documents and to integrating various areas of activity (e.g. economic and religious). Focus on France, England, Germany, and Italy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1330 - MEDIEVAL HISTORY 2

Minimum Credits: 3
Maximum Credits: 3
Survey course in the social, political, economic and religious history of Europe from the year 1000 to the black death. Special attention to interpreting the primary documents and to integrating various areas of activity (e.g. economic and religious). Focus on France, England, Germany, and Italy.

Academic Career: Undergraduate
RELGST 1335 - MEDIEVAL SPAIN

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1360 - INTRODUCTION TO THE RENAISSANCE

Minimum Credits: 3
Maximum Credits: 3
The idea of the Renaissance is central to Western culture. Many of our values and tastes devolve from—or consciously react against—patterns that were established or reinterpreted five hundred years ago. The student who explores the renaissance, therefore, gains hold of one of the keys of Western civilization. He or she also acquires practice in critical reading, discussion, and the written expression of ideas.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1370 - GLOBAL CHRISTIANITY

Minimum Credits: 3
Maximum Credits: 3
This course takes Christianity as a prism through which to consider the origins and growth of global religions. Christianity has tried to achieve a global status since its inception in the ancient Mediterranean world in the first century CE. Stemming from Paul's fateful decision to evangelize the Gentiles, Christianity has long sought to achieve a global network of believers, who now comprise about 20% of the world’s population. We will study Christian globalization in the twentieth and twenty-first centuries and focus on two Christian traditions, Catholicism and Pentecostalism, as examples of religions that have deliberately and successfully globalized. We will ask if the contemporary values of and pluralism relativism are good for religions and religious people. And, where religion is no longer a powerful cultural force, what are the prospects for a purely humanitarian approach to common problems in a globalizing world?
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1372 - CATHOLICISM IN THE NEW WORLD

Minimum Credits: 3
Maximum Credits: 3
The course will examine the history of the Roman Catholic church since 1492 in the Americas using various moments of internal crisis or external conflict as focal points for study. Topics will include: missionary and military contact with New World indigenous populations after 1492; the minority situation of Catholics in the new United States; the Irish famine and its global consequences; conflicts between Catholic ethnic groups; the impact of Catholic support for fascist regimes in the 1930s and 1940s; counter cultural forms of Catholicism (conscientious objectors, civil rights activists, pacifists); Vatican ii and its impact; liberation theology, Marxism and structural reform in Latin America; shifting theological positions on social and moral issues; the current sexual abuse crisis; the pope Francis effect. While the emphasis will rest upon the social, economic, and political dimensions of Catholic history, the course will also address the aesthetic and cultural legacy of Catholicism including sacred architecture, music, and the arts, in elite and popular forms.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

RELGST 1400 - RELIGION AND CULTURE IN AMERICA
Minimum Credits: 3
Maximum Credits: 3
This course will cover issues related to religion and how it intersects with American culture particularly in modern times.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1405 - RELIGION AND SEXUALITY

Minimum Credits: 3
Maximum Credits: 3
From Puritan attempts to control women's sexuality to contemporary debates over reproductive rights and gay marriage, religion and sexuality have played a formative role in the political and social history of the United States. Though American political ideologies have often tried to situate both sexuality and religion as private matters that have no bearing on public life, the topics we discuss in this course reveal that quite the opposite is true. We take a chronological approach to our subjects, locating the intersections between religion and sexuality throughout the course of American history. In the process, we'll discover how competing ideas regarding religion and sexuality have transformed, and continue to transform, American politics, culture, and society.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1410 - RELIGION IN AMERICAN THOUGHT

Minimum Credits: 3
Maximum Credits: 3
The story of American religion often focuses on the various religious groups and thinkers that have emerged from a Christian tradition. But what about those individuals and groups that rejected Christianity altogether, and who promoted 'freethinking' as a radical alternative to the religious mainstream of America? In this course we will explore the American tradition of freethought, from its roots in eighteenth century British deism to the current group of 'new atheists.' We will explore how American freethinkers critiqued and sought to reform the religious sensibilities of their fellow Americans, and the often harsh reaction that they received from their pious opponents. This course will deal with the history of freethinking writers and organizations and how they shaped and continue to influence the religious identity of United States.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1412 - MIGRATION IN AMERICAN RELIGION

Minimum Credits: 3
Maximum Credits: 3
Looking at a series of case studies from colonial times to the present, the course will examine how a change of locale influences religious ideas, practices, and identities. Materials will address migration into, within, and away from the United States.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1415 - RACE AND RELIGION

Minimum Credits: 3
Maximum Credits: 3

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1425 - POPULAR RELIGION IN AMERICA
Minimum Credits: 3
Maximum Credits: 3
Students will examine forms of religion that are called everyday, folk, local, or popular traditions, in contrast to "official" denominational categories that so often dominate the study of religion. With our focus on the western hemisphere, we will learn about new local practices that have emerged since 1492 among African, Caribbean, and native American peoples and to analyze how they represented responses to colonization, industrial capitalism, or globalization. Examples of popular traditions that we will study include: witchcraft; santeria, voodoo, saint's cults, miracles, pilgrimages, speaking in tongues, faith-healing and snake-handling. The course method is interdisciplinary, drawing upon anthropology, documentary film, history, religious studies, psychology, and sociology.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1427 - RELIGION AND LAW

Minimum Credits: 3
Maximum Credits: 3
Religion and Law examines the role of religious freedom in American history, from colonial days to the present, focusing on documents that predate the first amendment of 1791, as well as upon central supreme court cases that helped define what "legal religion" means as a category in the United States. Students will read court cases and become familiar with arguments for and against the ideal of religious freedom, including court cases involving the Amish, Mormons, Santeria, and the use of religious symbols in public places.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1438 - RELIGION AND POLITICS

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course will be to consider the public and political implications of religion in several different political systems. We will begin with an overview of the implications for politics of various types of religious systems. Religious beliefs and institutions have wide ranging implications for civic norms, public policy, political leadership, and the treatment of various social groups, including women and minorities.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1440 - RELIGION AND POLITICS OF THE MIDDLE EAST

Minimum Credits: 3
Maximum Credits: 3
This course focuses on the role of religion in the politics of the contemporary middle east. A general survey of the role of religion in the history of the region, and a cross regional historical-comparative view of the relationship between religious phenomena and political movements and institutions set the context for an investigation of the politics of religion in recent developments in the region.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1450 - ISLAM, LAW, AND POLITICS

Minimum Credits: 3
Maximum Credits: 3
The emergence of modern Islamic political movements worldwide has had not only a profound impact on contemporary global geo-politics but has also triggered heated debates around the question of the compatibility of Islam with liberal democracy. This class investigates the "vexed" relation between Islam and politics, profoundly influenced by the experience of colonialism, and standing in complex relationship to concepts such as the modern nation-state, democracy, liberalism, or secularism. The class will combine empirically grounded studies the multiple facets of past and
contemporary Muslim politics in Muslim-majority and minority contexts with a more theoretical investigation of modern Islamic political thought; here it will examine its intellectual origins, its arguments, the challenge it poses to its liberal counterparts, but also its conundrums and contradictions.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RELGST 1452 - HYMNS & HIPHOP: SOUNDS OF ISLAM**

**Minimum Credits:** 3  
**Maximum Credits:** 3

From its inception, the Islamic tradition has placed a heavy emphasis on the word and on listening to the word, and has developed a rich and ambiguous relationship to sound. This course draws on theological, historical, anthropological and theoretical perspectives to investigate the this relationship. We discuss various scholarly approaches to the senses, the relationship between listening and power, and the changing conceptions of what it has meant to listen in Islamic culture. In particular, we discuss how new media technologies and popular culture have transformed sound in Muslim communities, and how the ongoing "war on terror" has refashioned Islamic soundscapes.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RELGST 1455 - ISLAM IN EUROPE**

**Minimum Credits:** 3  
**Maximum Credits:** 3

Since 9/11 Europe has become increasingly anxious about its multi-racial and multi-religious populations, the result of successive waves of non-European immigrants who have, since the end of WWII, made Europe their home. At the heart of these concerns is the question whether followers of the Muslim faith can successfully be integrated into a European society that identifies culturally as Judeo-Christian and defines its social order as secular. The different public debates triggered by this anxiety center on the question of the legitimate limits of cultural difference within liberal democratic societies, thereby also reflecting a growing unpopularity of multicultural ideals. Political discourses stress the need for a robust defense of liberal values that migrant communities (especially Muslim communities) must accept. In order to achieve that, various governmental techniques have been deployed, which are now considered as an essential part of European counter-terrorist strategies, along with security policies and stricter migration controls. Interestingly, many of these government techniques involve gender and sexual politics, which are at the heart of policies and discourses around integration and multiculturalism. The course will look critically at these various developments through an interdisciplinary approach that combines anthropological studies with readings from political and social theory, feminist and queer studies in order to think about the issues at stake around Islam, religious pluralism and secular governance in Europe. As additional course material, the class will draw on a variety of audio-visual material, such as fiction films, documentaries, or youtube clips.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RELGST 1457 - CONTEMPORARY ISLAM: INTERNAL DEBATES**

**Minimum Credits:** 3  
**Maximum Credits:** 3

From the second part of the 19th century, Muslim intellectuals have been involved in an intensive ideological/theological debate. While this debate was prompted by the strong presence and influence of the west, it has not been simply a debate between the Islamic fundamentalism and the western world. The modernist and fundamentalist debates of the last century are primarily the internal debates around historically significant issues that transformed Islamic intellectual traditions.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RELGST 1475 - RELIGIOUS DIVERSITY**
What is the best way to accommodate religious and cultural diversity within a nation-state and in civil society? How should individual rights to practice religion be balanced with communal needs? Should freedom from religion be protected as much or more than freedom of religion? These are pressing contemporary issues in many countries, including the United States, but issues of religious diversity and questions of whether and how to tolerate religious minorities have a long history. In this course, we will examine the toleration of minority religions in particular historical settings, and the issues and problems (both doctrinal and social/political) that societies grappled with as they confronted diverse religious landscapes. We will also use these historical precedents as a lens to examine contemporary examples of religious pluralism, diversity, and conflict. Case studies will mainly be drawn from pre-modern Europe and modern Europe and North America, but we will also look at Mughal and modern India and discuss religion in pre-modern China.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1500 - RELIGION IN INDIA 1

Few countries can boast such an extensive and diverse religious heritage as can India. It is the birthplace of Hinduism, Buddhism, Jainism, and Sikhism, home to a large Muslim community, as well as to small, but ancient, communities of Syrian Christians, Parsis, and Jews. The course gives a brief historical overview of these religious traditions, introduces students to basic concepts related to each of them, and illustrates their rich practices through primary and secondary readings, films, art, and music.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1510 - RELIGION IN INDIA 2: STORYTELLING AS A RELIGIOUS FORM

This course focuses on the religious life of India as expressed through storytelling. Central to this life are rich and diverse narrative traditions, both oral and written, some of which have their roots in the ancient Vedic literature, in the famous epics of the Mahabharata and the Ramayana, in popular folk tales and philosophical debates. Through an in-depth exploration of different genres of primarily Hindu narrative traditions, students will be able to see (1) how certain episodes and characters from the selected stories have been used in religious and philosophical teachings about spiritual emancipation and liberation; (2) how the stories and their protagonists have been variously (re)cast over time by members of dominant as well as non-dominant religious and/ or political groups; and also, (3) how they have been appropriated and incorporated in politically sensitive times and situations into a wider narrative of nation(hood). The role of popular media (TV, film, etc.) In linking nation and narration in modern times will also be examined.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1517 - MOUNTAINS AND MEDICAL SYSTEMS

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1518 - RELIGION AND ECOLOGY

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
This course explores various religious perspectives on the meaning and value of nature and the relationship of humans to the environment. How have different religious communities conceived of the natural world and responded to ecological crisis? How have food and farming practices been shaped by religious tradition? Special attention will be given to case studies from contemporary society, with a focus on American religious movements that take issues such as ecojustice, sustainable farming practices, and responsible consumption seriously or are defined by them. Classic religious texts, particularly of the biblical tradition, will be studied when relevant, as will archaeological and ethnographic studies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1519 - RELIGION, NATURE AND ENVIRONMENT

Minimum Credits: 3
Maximum Credits: 3

When is religion good for the environment? When is it not? In this course, students will become acquainted with how religious traditions throughout the world have addressed specific ecological problems. They will explore ways in which religious institutions are an important organizational hub in struggles for environmental justice. They will compare the structural features shared by environmentalism and religiosity, both of which are interested in making meaning of the world by appealing to an ultimate authority, such as God or Nature; and in forming identities and building communities by promoting guidelines, norms, and ritualized behaviors. The very construction of Nature as a concept, and its reverence in the context of the sustainability movement, can be informed by theoretical discourse from the field of Religious Studies. After a survey of approaches to the natural world in major religious traditions, students will focus on themes such as garden spiritualties, gendered Nature reverence, and eco-justice. They will also acquire the skills to assess the scripturally inspired indifference-or even antagonism-to environmental science, and the long shadow it has cast on the global economy.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1520 - BUDDHISM ALONG THE SILK ROAD

Minimum Credits: 3
Maximum Credits: 3

This class serves as an introduction to Buddhism from its origins through the seventh century CE as it moved along the Silk Road, the ancient EurAsian trading network that is considered one of the earliest and most important super highways of trade and culture. Concomitantly, it serves as an introduction to the silk road as the scenario for contact and exchange. The emphasis is on religious praxis, the actors and places that transformed Buddhism and were transformed by it. We will examine archaeological remains and art and discuss how they complement or sometimes contradict textually-based historical narratives. Through the examination of four case studies we will discuss questions related to religious interaction as embodied in material culture and analyze it in context.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1540 - SAINTS EAST AND WEST

Minimum Credits: 3
Maximum Credits: 3

A Russian monk once observed that "each saint is a unique event." Indeed, in various religious traditions we encounter men and women who are recognized and venerated as particularly holy and unique witnesses to the divine. Just as each saint is unique within his or her tradition so is each tradition of saints unique in its articulation and expression of the overall religious culture. By looking cross-culturally at the materials on saints selected for this course and discussing (problematizing) the notion of sainthood itself, we examine religious themes, ideas and symbols found in them. These diverse writings are often marked by a very personal tone, a deeply felt relation with the divine (sometimes reflecting a saint), inner struggles, sometimes his/her mystical experience of union), but also by pleas and calls for social and/or religious reforms. Our examples of devotional literature include Hindu, Muslim, and Christian sources, medieval as well as modern. Even though originating in specific religious contexts, many of these narratives raise issues which have wider human appeal and hence relevance for us today, too.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
RELGST 1545 - MYSTICISM: EAST AND EAST

Minimum Credits: 3
Maximum Credits: 3
Mysticism, understood as a living experience of theological doctrines, constitutes an unexpected point of convergence between such different religious traditions as Hinduism and Eastern Orthodox Christianity. In this course we look into how this spiritual kinship is forged from distinct practices in India and in the traditions of Eastern Christianity, by examining the selected mystical writings of both religious traditions. The course is structured around three central themes: 1) God as Mystery: negative theology (Hindu and Orthodox ways of unknowing the divine). 2) God as Person: the Hindu notion of avatar and Orthodox understanding of incarnation, and 3) God as Prayer: two selected methods of contemplation (Hindu yoga and Orthodox hesychast prayer). The course is based largely on reading and discussion of primary sources (in English translation) supplemented with selected secondary sources to help enhance students' understanding of the comparative method, on the one hand, and symbolic, often enigmatic and sometimes "upside-down" language of the mystical texts, on the other.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1550 - EAST ASIAN BUDDHISM

Minimum Credits: 3
Maximum Credits: 3
The transmission of Buddhism to East Asia was a momentous development in the history of world cultures and religions. Not only did it precipitate major changes in the cultures of China, Korea and Japan, it also was attended by transformations within Buddhism itself. Beginning with an introduction to the basic concepts of Buddhism, this course examines the major doctrinal, meditative, devotional, and institutional traditions and themes within Chinese and Japanese Buddhism in historical perspective. Particular attention is paid to the problems of transmission of thought and practices from one culture to another and to the ways in which Buddhism changed to meet those challenges and make itself relevant to the members of East Asian societies. We strive to develop an awareness of how Chinese and Japanese Buddhism interacted with and helped to shape East Asian history as well as to cultivate sensitivity to and appreciation of East Asian Buddhism as a contribution to our understanding of the human experience.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1552 - BUDDHIST MEDITATIVE TRADITIONS

Minimum Credits: 3
Maximum Credits: 3
This seminar examines the relationships between doctrine, practice and institution and the culture(s) in which they grow through examination of major themes and sources of authority in Chan/Zen Buddhism.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1554 - DEATH AND BEYOND IN BUDDHIST CULTURES

Minimum Credits: 3
Maximum Credits: 3
Death and beyond in Buddhist cultures mortality is the human condition. This seminar focuses on the philosophical discourse, beliefs and practices relating to death, dying and the afterlife in Buddhist cultures, both traditionally and in modern times. We explore Buddhist cosmology, karmic causality, death tales, postmortem journeys, ancestor rites, mortuary practices and ghost placation. Through primary texts in translation, secondary scholarship, discussion and film, we see how dealing with death tells us as much about life as it does about what lies beyond.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1557 - BUDDHIST LIVES
RELGST 1558 - BUDDHISM AND PSYCHOLOGY

This course is divided into four thematic parts. The first part introduces basic knowledge on Buddhism. It then shows how the encounter between Buddhism and psychology has occurred in the wider context of Buddhist modernism, which has involved attempts by Buddhist reformers, psychologists, and neuroscientists to demythologize Buddhism to show how it can be understood as complementing modern empirical science. Part two offers concrete examples of Buddhist modernism by illustrating how Buddhist contemplative practices and doctrines such as sati have been reinterpreted and reformulated in modern psychology. Part three examines how a Japanese Zen practitioner's presentation of Zen compares with psychotherapeutic perspectives on it. Finally, in part four, a Buddhist-inspired psychotherapy widely used in Japan is examined to show how the reformulation of Buddhism to achieve psychotherapeutic goals has occurred in modern times in East Asia, albeit in a way that is distinctive from Buddhist-inspired psychotherapeutic practices in the west.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1560 - RELIGION IN CHINA

This course serves as a historical, doctrinal and practical introduction to the major religious traditions of China - both classical and modern-day.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1561 - CHINESE THOUGHT

A survey of major themes in the intellectual history of China from ancient times to the twentieth century, with special attention to the traditions of political and ethical debate. Readings include key texts from the classical canon (e.g. analects, mencius, daodejing), medieval religious traditions (Daoism and Buddhism), and late-imperial metaphysics. The course will conclude with a survey of various attempts at inheriting and disinheriting the past intellectual tradition in the twentieth century.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1570 - RELIGION IN JAPAN

This course serves as a historical, doctrinal and practical introduction to the major religious traditions of Japan both classical and modern-day.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1572 - POPULAR RELIGION IN CHANGING JAPAN
Minimum Credits: 3
Maximum Credits: 3
This seminar, through a thematic treatment of popular and civil religion, informed by religious and cultural history, looks at the process through which religion participates in shaping and reshaping worldviews, behaviors, and practices in modern Japan.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1610 - MYTH, SYMBOL AND RITUAL

Minimum Credits: 3
Maximum Credits: 3
Are myths only a thing of the past, or are there contemporary 'myths' that we live by? To what extent are football games and shopping trips "rituals"? How do plants and animals, the cosmos and the human body, or things we associate with bad luck or good health, function as symbols? This course offers a look at how myths, symbols and rituals, in their traditional and contemporary garb, constantly renew themselves as a way for different cultures to give significance to human life. By understanding these three basic forms of human expression we can gain understanding of a wide range of social and religious phenomena. We start with comparative exploration of myths on the origin of the world, humanity, and the gods, and with such rituals as rites of passage, festivals, and pilgrimages, as well as the theories of these expressions and their significance. The course then moves to observations and reflections on the role of myth, symbol, and ritual in contemporary life, and their relation to such forms of human expression as literature, art, film and our own dreams.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1620 - WOMEN IN RELIGION

Minimum Credits: 3
Maximum Credits: 3
An examination of the place and role of women in Western religious traditions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1642 - CHRISTIAN-MUSLIM RELATIONS

Minimum Credits: 3
Maximum Credits: 3
This course surveys the historical interaction between Christian and Muslim communities over the past 1400 years and focuses on the art of polemic as an important tool in the human construction of religious concepts. We will begin by understanding the evolution of Islam in the seventh century, and continue with the encounters between Islam and the byzantine empire, and the medieval caliphate's encounters with the West, including the crusades. We will then consider specific elements of the interaction between Christian and Muslim communities, drawing from a variety of Muslim communities in Europe and the United States.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1644 - CHRISTIAN MUSLIMS JEWS IN THE MIDDLE AGES: CONNECTION & CONFLICT

Minimum Credits: 3
Maximum Credits: 3
The emergence of Christianity from Judaism and the implications of the relationship between Christianity and Judaism have been of critical importance in the history of Europe and the world and both Christians and Jews continue to grapple with the theological, political, and cultural impacts of that relationship in today's world. This course surveys the relationships between Jews and Christians from the time of Jesus through the modern era, as viewed by Jews, Christians, and sometimes those in neither category. Topics include the Jewish origins of Christianity; rabbinic views
of Christianity and church fathers' views of Judaism; the status of Jews and Jewish communities in the roman empire and in medieval Europe, medieval persecution of Jews; interreligious disputations and polemics; the impact of the reformation and the enlightenment; Jewish-Christian relations in modern 'secular' states; the rise of new forms of anti-Semitism; the holocaust; and post-holocaust dialogue and new theologies of interreligious encounter. We will discuss not only the significance of Jewish-Christian interactions for European and American history but also assess Jewish-Christian relations as a case study in the broader history of religious diversity, pluralism, and conflict.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1645 - THE HISTORICAL JESUS

Minimum Credits: 3
Maximum Credits: 3
This course examines the complex and often polarized relationship between Jesus and Jews (and by extension, Christianity and Judaism) in both ancient and modern contexts. Students will interact with a wide range of primary sources centered on the figure of Jesus `from the Christian gospels through rabbinic discussions of Jesus to modern portrayals of Jesus and the Jews in cinema and scholarship.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1665 - ANTHROPOLOGY OF RELIGION

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce students to the anthropological study of religion. While it is generally assumed that religious practice exists in nearly every human society, what 'religion' is, how it should be defined, and whether there is a basic common denominator that is universal is a matter of debate among anthropologists. We will explore different theoretical and conceptual approaches that have informed anthropological perspectives in the study of religion, while also investigating anthropological studies of ritual, sacrifice, magic, healing, and death. Furthermore, we examine how these studies have discussed the relation of religion to questions around kinship, gender and sexuality, and social justice. By covering such a range of topics, this class enables students to learn how religion is understood, experienced and expressed across divergent sociocultural contexts, in the past and in the present.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1680 - HISTORY AND MEMORY IN THE JEWISH TRADITION

Minimum Credits: 3
Maximum Credits: 3
Students will be introduced to the manner in which historians have studied and understood the Jewish experience from antiquity through the modern age. The role of historical study in the formation of Jewish identity will be especially highlighted.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1681 - INVENTING ISRAEL: ZIONISM, ANTI-ZIONISM, AND POST-ZIONISM

Minimum Credits: 3
Maximum Credits: 3
In this course, we will study the origins and development of Zionism as a form of modern Jewish nationalism, the emergence of different Zionist ideological streams, and non-Zionist, anti-Zionist, and post-Zionist views of Jews and non-Jews. We will also explore Zionism as a case study of relations of religion and nationalism in modernity. This course is an opportunity to carefully study and to contextualize writings and ideas of religious and political thinkers that have been both influential and controversial. The goal is to offer students historical background to ideas and issues of contemporary importance as well as skills in interpretation and contextualization of complex texts that continue to inform public discourse.
RELGST 1720 - RELIGION AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
Religion is thought, felt, and acted out in social and cultural contexts. The relationship between religion and culture is the focus of the course. The objectives are to understand religion wherever and whenever found and to understand the anthropological approach in the cross-cultural study of religion. Religious belief, ritual, myth, dogma and religious specialists in industrial and non-industrial societies are compared.

RELGST 1725 - DEATH AND HEALTHCARE PROFESSIONS

Minimum Credits: 3
Maximum Credits: 3
The American culture of the 20th and 21st centuries has been called, not death-defying, but death-denying. It is often said that America is the only place in the world that treats death as optional. Once upon a time, we couldn't have open, public conversations about breast cancer, because the word could not be uttered aloud. In many places, it is just as hard today to have an open, public conversation about death and dying. This phenomenon is not just a social more; it affects the practice of many professions and entire segments of our economy and society. This course will explore our individual and cultural reactions to mortality, the ways in which dying in today's America is different from dying throughout history or elsewhere in the world, and the responses of a variety of professions, both within the field of healthcare and beyond, to their encounters with people in the various stages of dying. Students will be asked, at turns, to be scientific, philosophical, clinical, analytical, and emotional in encountering the concepts and material presented here. This should be a true interdisciplinary experience.

RELGST 1730 - PROBLEMS IN THE PHILOSOPHY OF RELIGION

Minimum Credits: 3
Maximum Credits: 3
A rigorous examination of the arguments for and against the existence of God.

RELGST 1760 - RELIGION AND RATIONALITY

Minimum Credits: 3
Maximum Credits: 3
Does--and should--religion have a role in the secular sphere? How does culture shape religion? Is faith compatible with reason? This course critically examines how both religious and nonreligious thinkers have navigated the question of the relation between faith and reason throughout the history of Western thought. Special attention will be paid to evaluating how the relationship between religion and philosophy developed within Christianity, Judaism, and Islam. A further emphasis will be given to how the relationship between religion and philosophy shapes the our approach to myth, race, gender, and science.

RELGST 1762 - THE GUIDE OF THE PERPLEXED
Minimum Credits: 3
Maximum Credits: 3
This course will study the guide of the perplexed by the great Jewish thinker Moses Maimonides (1138-1204). It will give special attention to the religious language and arguments for the existence of god in the text, and to Maimonides teachings on religious experience, revelation and his views on human perfection and immortality.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1770 - SCIENCE AND RELIGION

Minimum Credits: 3
Maximum Credits: 3
Are science and religion at odds or harmonizable? Do they coincide or represent completely separate discourses? This course examines the relationship between science, rationality, faith, and religion. Special attention will be given to ancient creation narratives and their interpretation, historical dialogues regarding faith and reason in the Western monotheist faiths (Christianity, Judaism, Islam), the scientific revolution, and various approaches to evolutionary theory. We will also consider practical, contemporary issues such as neuroscience and religious practice, ecology and faith, and scientific views toward gender and race.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RELGST 1780 - COMPUTATIONAL METHODS IN THE HUMANITIES

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the use of computational modeling and programming to conduct text-based research in the humanities. Course goals include 1) learning how to identify research questions in the humanities that are amenable to computational analysis and processing and 2) designing and implementing xml-based computational systems to explore those questions. No prior programming experience or knowledge of foreign languages required.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RELGST 1800 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course aims to create a sustained and reciprocal dialogue between bible and film, exploring the intersection of the biblical text with modern cinema. In other words, we will use modern films to facilitate discussion about various dimensions, issues, and themes encoded in select biblical texts and traditions (Jewish and Christian), and conversely we will use the biblical traditions to probe the religious, cultural, and ideological layers embedded within modern cinema. Movies examined in this course will include both overt treatments of the biblical text, in particular, several very different treatments of the figure of Jesus and subtle, indirect engagements with various biblical themes and teachings.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

RELGST 1803 - CAPSTONE SEMINAR

Minimum Credits: 3
Maximum Credits: 3
The senior thesis capstone seminar required of all graduating majors is offered annually in the Fall Term and is taught by rotating faculty with a different theme each year. Students research, write, and present a project of their own choosing based on the annual theme under the supervision of the seminar instructor and a research advisor from among our faculty. Permission of the DUS is required.
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade

**RELGST 1900 - INTERNSHIP**

Minimum Credits: 1  
Maximum Credits: 3  
A variety of projects may be undertaken by students under the close supervision of a senior faculty member.  
**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit

**RELGST 1901 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 4  
A variety of individual reading and research projects may be undertaken by students under the close supervision of a senior faculty member.  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**RELGST 1902 - DIRECTED STUDY-UNDERGRADUATE**

Minimum Credits: 1  
Maximum Credits: 4  
Students may undertake a variety of individual reading or research projects under the close supervision of a senior faculty member. Regular meetings are required.  
**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

**RELGST 1903 - DIRECTED RESEARCH-UNDERGRADUATE**

Minimum Credits: 1  
Maximum Credits: 4  
Majors may take on a research project under the direction of a department faculty member. Permission of the DUS is required.  
**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

**RELGST 1904 - UNDERGRADUATE RESEARCH ASSISTANT**

Minimum Credits: 1  
Maximum Credits: 4  
Students participate in a faculty member's current research project as a research assistant under the guidance of the faculty member. The student is given training in research methods. 1-4 credits available depending on number of hours per week worked. Credits earned will be S/N only. Permission of the department (DUS) and the faculty member is required.  
**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit

**RELGST 1905 - UNDERGRADUATE TEACHING ASSISTANT**
Students serve as an undergraduate teaching assistant in religious studies courses under the supervision of a faculty member. 1-4 credits available depending on number of hours per week worked. Credits earned will be s/n only. Permission of the department (DUS) and the faculty member is required.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: LG/SNC Elective Basis

AFROTC 0001 - HERITAGE AND VALUES OF UNITED STATES AIR FORCE

Minimum Credits: 1
Maximum Credits: 1
AS 100, "Heritage and Values of the United States Air Force," is a survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the air force.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

AFROTC 0002 - FOUNDATIONS OF US AIR FORCE

Minimum Credits: 1
Maximum Credits: 1
This course is the second of a two semester sequence dealing with the U.S. Air Force in the contemporary world. The sequence focuses on the basic characteristics of air doctrine; strategic offensive and defense, general purpose, and aerospace support forces; and officer ship.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: LVL: Fr or So

AFROTC 0003 - EVOLUTION OF AIR AND SPACE POWER

Minimum Credits: 1
Maximum Credits: 1
As200 course designed to examine general aspects of air & space power, through historical perspective. Course covers time period from the first balloons & dirigibles to space age global positioning systems of the Persian Gulf War. Historical examples provided to extrapolate development of a capabilities & missions to demonstrate evolution of what has become today's USAF Air & Space Power. Course provides cadets with knowledge level understanding of air & space power from an institutional doctrinal & historical perspective. LLAB mandatory for AFROTC Cadets & complements course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

AFROTC 0004 - EVOLUTION OF AIR AND SPACE POWER

Minimum Credits: 1
Maximum Credits: 1
This course is the second of a two semester sequence which surveys the history of air power from balloons and dirigibles through the jet age. It focuses on factors contributing to change in the nature of military conflict; the development of air power and the evolution of air power doctrine and concepts; and the role of technology in the growth of air power.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: LVL: So
AFROTC 0005 - FRESHMAN LEADERSHIP LAB

Minimum Credits: 0  
Maximum Credits: 0  
The as100 and as200 leadership laboratory courses (LLABS) include a study of air force customs and courtesies, drills and ceremonies, and military commands. The LLAB also includes studying the environment of an air force officer and learning about areas of opportunity available to commissioned officers.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: H/S/U Basis  
Course Requirements: LVL: Fr

AFROTC 0006 - SOPHOMORE LEADERSHIP LAB

Minimum Credits: 0  
Maximum Credits: 0  
The as100 and as200 leadership laboratory courses (LLAB) include a study of air force customs and courtesies, drill and ceremonies, and military commands. The LLAB also includes studying the environment of an air force officer and learning about areas of opportunity available to commissioned officers.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: H/S/U Basis  
Course Requirements: LVL: So

AFROTC 0007 - TEAM AND LEADERSHIP

Minimum Credits: 1  
Maximum Credits: 1  
Focuses on laying the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The courses will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

AFROTC 1005 - JUNIOR LEADERSHIP LAB

Minimum Credits: 0  
Maximum Credits: 0  
The as300 and as400 LLABS consist of activities classified as leadership and management experiences. They involve the planning and controlling of military activities of the cadet corps, and the preparation of briefings and other oral and written communications. LLABS also include interviews, guidance, and information which will increase the understanding, motivation, and performance of other cadets.  
Academic Career: Undergraduate  
Course Component: Practicum  
Grade Component: H/S/U Basis  
Course Requirements: LVL: Jr

AFROTC 1006 - SENIOR LEADERSHIP LAB

Minimum Credits: 0  
Maximum Credits: 0  
The as300 and as400 LLABS consist of activities classified as leadership and management experiences. They involve the planning and controlling of military activities of the cadet corps, and the preparation of briefings and other oral and written communications. LLABS also include interviews,
guidance, and information which will increase the understanding, motivation, and performance of other cadets.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** H/S/U Basis  
**Course Requirements:** LVL: Sr

**AFROTC 1013 - LEADING PEOPLE AND EFFECTIVE COMMUNICATION**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
AS 300, "LEADING PEOPLE AND EFFECTIVE COMMUNICATION," teaches cadets advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Cadets have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**AFROTC 1014 - AIR FORCE LEADERSHIP STUDIES**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This is the second of a two-semester integrated management course emphasizing the concepts and skills required by the successful manager and leader. It also includes instruction on communication skills and military ethics. The curriculum encompasses individual motivational and behavioral processes, leadership, communication, and group dynamics within the context of a military organization.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** LVL: Jr

**AFROTC 1015 - NATIONAL SECURITY AFFAIRS/PREPARATION FOR ACTIVE DUTY**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
AS 400, "NATIONAL SECURITY AFFAIRS/PREPARATION FOR ACTIVE DUTY," is designed for college seniors and gives them the foundation to understand their role as military officers in American society. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the cadets for active duty.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**AFROTC 1016 - NATIONAL SECURITY FORCES**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
This course is the second of two semester sequence surveying key issues of U.S. National security. The second semester focuses on the soviet union and major regional issues of importance to U.S. National interests. It also includes instruction on the military as a profession, Officership, and the military justice system.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**MILS 0011 - INTRODUCTION TO THE ARMY**
Minimum Credits: 1
Maximum Credits: 1
MILS 0011 is offered during the fall term. This freshman course is an introduction to army ROTC. Course instruction includes survival techniques, first aid, wear of the military uniform and organization, role and branches of the U.S. army.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MILS 0012 - ADAPTIVE LEADERSHIP

Minimum Credits: 1
Maximum Credits: 1
MILS 0012 is offered during the spring term. This freshman course is an introduction to army ROTC. Course instruction includes leadership and management, drill and ceremonies, land navigation, basic, pistol/rifle marksmanship and organization and role of the U.S. army reserve and national guard units.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MILS 0021 - LEADERSHIP & DECISION MAKING

Minimum Credits: 1
Maximum Credits: 1
MILS 0021 is offered during the fall term. This sophomore course is an introduction to army ROTC. Course instruction includes the total army concept, army rank and structure, leadership and management, land navigation and drill and ceremonies.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MILS 0022 - ARMY TEAM DEVELOPMENT

Minimum Credits: 1
Maximum Credits: 1
MILS 0022 is offered during the spring term. This sophomore course is an introduction to army ROTC. Course instruction includes group communication, decision making and problem solving techniques, military history, leadership and management and land navigation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MILS 1031 - TRAINING MANAGEMENT

Minimum Credits: 1
Maximum Credits: 1
MILS 1031 is offered during the fall term. This junior course prepares the army ROTC student for commissioning into the U.S. army as a second lieutenant. Course instruction is coupled with practical exercises in tactical and technical military subjects with particular emphasis on leadership development, problem solving and decision making.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

MILS 1032 - APPLIED LEADERSHIP
MILS 1032 is offered during the spring term. This junior course prepares the army ROTC student for commissioning into the U.S. army as a second lieutenant. Course instruction is coupled with practical exercises in tactical and technical military subjects with particular emphasis on leadership development, problem solving and decision making.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**MILS 1041 - THE ARMY OFFICER**

Minimum Credits: 1  
Maximum Credits: 1  
MILS 1041 is offered during the fall term. This senior course continues to prepare the army ROTC student for commissioning into the U.S. army as a second lieutenant. Course instruction emphasizes leadership, army operations and procedures.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**MILS 1042 - COMPANY GRADE LEADERSHIP**

Minimum Credits: 1  
Maximum Credits: 1  
MILS 1042 is offered during the spring term. This senior course continues to prepare the army ROTC student for commissioning into the U.S. army as a second lieutenant. Course instruction emphasizes military justice and professional ethics.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**RUSS 0010 - ELEMENTARY RUSSIAN 1**

Minimum Credits: 5  
Maximum Credits: 5  
A traditional four-skills course, this course meets with the main lecturer and with the drill instructor. The student acquires basic skills in Russian pronunciation, speaking, listening, and writing, commensurate with the grammatical topics covered. During the first semester these topics include, among others; the present and past tenses, the nominative, prepositional, and accusative cases. The course aims to go beyond the confines of the textbook readings and conversations and apply grammar and vocabulary to practical situations.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**RUSS 0014 - RUSSIAN FOR HERITAGE LEARNERS 1**

Minimum Credits: 3  
Maximum Credits: 3  
This course is designed specifically for "heritage speakers" of Russian (those who grew up speaking or hearing Russian in the family without a native Russian's full educational and cultural background). It focuses on developing speaking, reading, and writing skills and cultural knowledge that will promote the attainment of professional-level proficiency. All students will develop significantly enhanced grammatical awareness, reading and writing competency, and a sophisticated vocabulary.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RUSS 0020 - ELEMENTARY RUSSIAN 2**
RUSS 0030 - INTERMEDIATE RUSSIAN 1

Minimum Credits: 4
Maximum Credits: 4
The continuation of Russian 0020, this course completes the introduction to basic Russian grammatical structures. The dative case, participles and gerunds, verbs of motion, and questions of verbal government are dealt with systematically. Extra-textbook material introduces the student to samples of unedited real-language texts. In developing spoken language ability, topics related to cross-cultural comparison receive prominence.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RUSS 0040 - INTERMEDIATE RUSSIAN 2

Minimum Credits: 5
Maximum Credits: 5
Russian 0040 is a transitional course between Russian 0030, which finishes the beginning textbook, and third year Russian, which focuses on conversational skills. An annotated short contemporary soviet novel is used as the basis for written and conversational work. Considerable time is devoted to grammatical review, and to completing any grammatical subjects incompletely covered by the introductory textbook, especially participles and gerunds, and verbal aspect.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RUSS 0090 - RUSSIAN FAIRY TALES

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to Russian folklore through the oral genre of fairy tales so as to acquaint them with popular structures of thought underpinning modes of Russian behavior. A significant component of the course will consist of visual and audio representations of scenes from fairy tales.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0091 - READING RUSSIAN FAIRY TALES IN RUSSIAN

Minimum Credits: 1
Maximum Credits: 1
This course is a one-credit add-on module for students who are taking (or have taken) Russian fairy tales (RUSS 0090) and who would like to read selected tales and other texts in Russian.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit

RUSS 0103 - INTERMEDIATE RUSSIAN 1
RUSS 0104 - INTERMEDIATE RUSSIAN 1

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

RUSS 0110 - RUSSIAN CONVERSATION PRACTICE

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Satisfactory/No Credit

RUSS 0210 - INTENSIVE BEGINNING RUSSIAN

Minimum Credits: 8
Maximum Credits: 8
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

RUSS 0211 - BEGINNING INTENSIVE RUSSIAN PITT/MOSCOW

Minimum Credits: 10
Maximum Credits: 10
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

RUSS 0216 - BEGINNING INTENSIVE RUSSIAN ABROAD

Minimum Credits: 8
Maximum Credits: 8
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

This is a course in first-year intensive Russian held abroad in a for eight weeks during summer. This course is eight weeks in duration.
RUSS 0220 - INTENSIVE INTERMEDIATE RUSSIAN

Minimum Credits: 8
Maximum Credits: 8
A rigorous presentation of the basic uses of all nominal and verbal categories: declensions of nouns and adjectives in all cases, singular and plural, deepening of the knowledge of aspect uses, verbs of motion, conditional sentences, imperatives, indefinite pronouns, comparison of adjectives, time expressions, prepositional phrases. Attention paid to phraseology on both oral and written levels, introduction to participles and verbal adverbs. Great emphasis is placed on developing fluency in conversation.

RUSS 0221 - INTERMEDIATE INTENSIVE RUSSIAN PITT/MOSCOW

Minimum Credits: 10
Maximum Credits: 10
This is a second-year Russian course, equivalent to RUSS 0030 and 0040 and RUSS 0220. Four weeks on campus and five weeks in Moscow at Moscow state linguistic university. Part of the Russian summer institute.

RUSS 0226 - INTERMEDIATE INTENSIVE RUSSIAN ABROAD

Minimum Credits: 8
Maximum Credits: 8
This is a course in second-year intermediate intensive Russian held abroad for eight weeks during summer. This course is eight weeks in duration.

RUSS 0230 - INTENSIVE ADVANCED RUSSIAN

Minimum Credits: 8
Maximum Credits: 8
This intensive course has two components: the first, conversation, will consist in the preparation of dialogues, debates, and in-class discussions in Russian. The second, grammar, will be based on an accompanying grammar text and on short compositions that will draw on material covered in the text. The course objectives are: to develop a familiarity with the more subtle and complex aspects of Russian grammar; to develop an active vocabulary in practical, everyday topics, suited for travel to the soviet union; to refine composition skills.

RUSS 0231 - ADVANCED INTENSIVE RUSSIAN PITT/MOSCOW

Minimum Credits: 10
Maximum Credits: 10
This is an advanced-level (third-year) Russian language course, equivalent to RUSS 0400 and 0410 and RUSS 0230. Four weeks on campus and five weeks in Moscow at Moscow state linguistic university. Part of the Russian summer institute.
RUSS 0236 - ROTC ADVANCED RUSSIAN ABROAD

Minimum Credits: 8
Maximum Credits: 8
This study abroad course at the advanced level of Russian, designed for ROTC project go scholarship recipients, develops an active vocabulary and grammar in practical, everyday topics, improves writing and speaking skills, and enriches cultural competency. Students will participate in a combination of intensive language classes, lectures, and cultural excursions.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

RUSS 0240 - INTENSIVE FOURTH-YEAR RUSSIAN

Minimum Credits: 8
Maximum Credits: 8
This intensive course is a survey of 19th century Russian literature aimed at post-third year Russian students. The course will consist of lectures, readings, and discussions covering the major 19th century authors; also translation, grammar review and composition and conversation practice.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

RUSS 0241 - 4TH YEAR INTENSIVE RUSSIAN PITT/MOSCOW

Minimum Credits: 10
Maximum Credits: 10
This is a fourth-year Russian language course requiring an advanced knowledge of the Russian language. Four weeks on campus and five weeks in Moscow at Moscow state linguistic university. Part of the Russian summer institute.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

RUSS 0246 - ROTC 4TH YEAR RUSSIAN ABROAD

Minimum Credits: 8
Maximum Credits: 8
This study abroad course at the fourth-year level of Russian, designed for ROTC project go scholarship recipients, develops an active vocabulary and grammar in practical, everyday topics, improves writing and speaking skills at the super advanced level, and enriches cultural competency. Students will participate in a combination of intensive language classes, lectures, and cultural excursions.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

RUSS 0325 - THE SHORT STORY

Minimum Credits: 3
Maximum Credits: 3
This course will be devoted to reading short stories from 19th and 20th century Russian literature. The authors include 19th century masters Pushkin, Gogol, Dostoevsky, Tolstoy, and Chekhov--to 20th century favorites Babel, Zamyatin and Zoshchenko, right up to contemporary writers Solzhenitsyn, Shalamov, Petrusheuskaya, Tolstaya, and Tokareuy.

Academic Career: Undergraduate
RUSS 0400 - ADVANCED RUSSIAN 1

Minimum Credits: 3
Maximum Credits: 3
This three-credit course develops third-year students' reading, writing, and oral skills through grammar review and readings. Students will write compositions in Russian and will summarize and comment in Russian on their reading in addition to participating in grammar review exercises in class.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0410 - ADVANCED RUSSIAN 2

Minimum Credits: 3
Maximum Credits: 3
A continuation of Advanced Russian 1, this three-credit course will focus on developing students' reading, writing, and oral skills through grammar review and readings.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0590 - FORMATIVE MASTERPIECES: RUSSIA 19TH CENTURY

Minimum Credits: 3
Maximum Credits: 3
This course will be devoted to reading formative literary masterpieces from the 19th century. The authors include Tolstoy, Dostoevsky and Chekhov and others such as Pushkin, Gogol, Turgenev and Ostrovsky.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0710 - EVENING RUSSIAN 1

Minimum Credits: 4
Maximum Credits: 4
This is a first-year, first-semester Russian course conducted in the evening for non-majors.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0720 - EVENING RUSSIAN 2

Minimum Credits: 4
Maximum Credits: 4
This is a first-year, second-semester Russian course conducted in the evening for non-majors.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0730 - EVENING RUSSIAN 3
Minimum Credits: 4  
Maximum Credits: 4  
This is a second-year, first-semester Russian course conducted in the evening for non-majors.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RUSS 0740 - EVENING RUSSIAN 4

Minimum Credits: 4  
Maximum Credits: 4  
This is a second-year, second-semester Russian course conducted in the evening for non-majors.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RUSS 0800 - MASTERPIECES 19TH CENTURY RUSSIAN LITERATURE

Minimum Credits: 3  
Maximum Credits: 3  
This course will focus on selected masterpieces of Russian literature of the nineteenth century. The chosen works will be studied and discussed for their intrinsic literary value and as examples of main literary trends. Readings will include short stories by Pushkin, Gogol, Leskov, and Chekov, as well as Gogol's novel "Dead Souls", Dostoevsky's "Crime and Punishment", and Tolstoy's "War and Peace".  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RUSS 0810 - MASTERPIECES 20TH CENTURY RUSSIAN LITERATURE

Minimum Credits: 3  
Maximum Credits: 3  
This course will focus on selected masterpieces of twentieth century Russian literature; particularly on four major authors; Bely (Petersburg), Pasternak (Dr. Zhivago), Babel (Red Cavalry), and Solzhenitsyn (Ivan Denisovich). Stories of more contemporary writers, including Rasputin, Bitov, Trifoniv, Iskandar, Sinyavsky, Shukshin, and Voinovich, will also be read. Emphasis is placed on the variety of prose narratives popular in the 20th century, and on the emergence of new problems and perspectives and their expression in the context of Soviet Russia.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RUSS 0811 - MADNESS AND MADMEN IN RUSS CULTURE

Minimum Credits: 3  
Maximum Credits: 3  
This course explores the theme of madness in Russian literature from its medieval period through our days. The emphasis will be placed not only on literary works, but also on painting, music, and cinema, as well as on nonfictional documents, such as Russian medical, judicial, political, and religious treatises and essays on madness. Reading assignments will draw from theoretical (Foucault), cultural history (Billington, Rzhevsky), and literary sources.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RUSS 0850 - EARLY RUSSIAN CULTURE
Minimum Credits: 3
Maximum Credits: 3
This course introduces the student to the development of Russian culture from 988 through 1825, including Russia's religious, artistic, and ideological writings. Readings will include the chronicles, vitae, apocrypha, epistolary polemics, secular tales, autobiography, and early prose fiction. Visual art and architecture of the Kievan, Novgorod, and Romanov periods of Russian history provide a larger artistic context for the literary works.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0860 - MODERN RUSSIAN CULTURE

Minimum Credits: 3
Maximum Credits: 3
From the reign of Nicholas I to the Gorbachev administration, Russian intellectual and artistic discourse has repeatedly returned to the question of Russia's relationship with the West. This issue will provide the focus for a cultural overview of the last two centuries.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0870 - RUSSIAN FILM: EISENSTEIN AND COMPANY

Minimum Credits: 3
Maximum Credits: 3
The course presents the history of Russian and Soviet films, filmmaking, and the film industry from the coronation of Tsar Nicholas II to the death of Stalin.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 0871 - RUSSIAN FILM STALIN TO PUTIN

Minimum Credits: 3
Maximum Credits: 3
The course traces the history of Russo-Soviet cinema from the death of Stalin to the present. Particular attention is paid to the four major periods in Russo-Soviet history since the death of Stalin.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 1066 - FORBIDDEN LOVE ON PAGE AND SCREEN

Minimum Credits: 3
Maximum Credits: 3
This course examines the mythology of extramarital transgression. Our primary focus will fall on the screen adaptations of four nineteenth-century novels of adultery: The Scarlet Letter (1850), Madame Bovary (1857), Anna Karenina (1875-1877), and Effi Briest (1895). We will read and analyze graphic novels based on these literary sources. Integrated into the course will be the verbal and visual texts which will allow us to realize that the novels of adultery are on a par with their celluloid and graphic-novel (comics-format) versions constitute the multi-faceted construct resting on the adultery myth.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 1202 - DOSTOEVSKY: THE MAJOR NOVELS
A close contextual examination of Dostoevsky's major novels, beginning with "notes from underground": crime and punishment, the idiot, the devils, raw youth, and the brothers Karamazov. Each text will be analyzed in the context of the cultural and intellectual debates that accompanied its reception in imperial Russia and the Soviet Union. Secondary readings will include representative essays by the social critics, formalists, Marxists, and semioticians.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RUSS 1210 - MAN/SUPERMAN: REPRESENTATIONS SUPERIOR INDIVIDUALS IN LITERATURE, FILM, PHILOSOPHY, DRAMA, AND MUSIC**

Minimum Credits: 3  
Maximum Credits: 3  
In 1866, in an apartment in St. Petersburg, Russia, Rodion Raskolnikov decides to rid the world of evil by murdering an old pawnbroker with an axe. This course examines literary, cinematic, dramatic, musical and philosophical responses to that murder, examining such questions as: what is a superior individual? What is the role of motivation in action? Must all action have an underlying motivation or is gratuitous action possible? What is the role of confession and legacy in the actions of the superman and his acts of will? What are the obligations of the superman to society.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RUSS 1305 - TOLSTOY**

Minimum Credits: 3  
Maximum Credits: 3  
L.N. Tolstoy's life and important stories and short novels will be studied with emphasis on their intrinsic artistic merits and their relation to the author's literary and spiritual development. Lectures on historical and literary background. Textual classroom analysis of the works read by students.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RUSS 1307 - CHEKHOV**

Minimum Credits: 3  
Maximum Credits: 3  
The three major aspects of Chekhov's art will be examined -- the humoristic stories and sketches of his youth, the typical Chekhovian story of his middle period, and his plays. Chekhov's place in the context of Russian literature and his importance as an original and modern playwright, as well as his lasting contribution to the understanding of modern characters and situations will be assessed.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**RUSS 1310 - NABOKOV**

Minimum Credits: 3  
Maximum Credits: 3  
A survey of the major writings of Vladimir Nabokov, including novels and short stories from both the Russian and American periods. Discussion topics will include: the semiotics of life-creation, art as perversity, author-hero dynamics, exile and nostalgia, bilingualism and translation, the violence of linguistic play, the manipulation of narrative desire; modernism and postmodernism.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade
RUSS 1400 - MORPHOLOGY AND STRUCTURE OF RUSSIAN

Minimum Credits: 3
Maximum Credits: 3
This course reviews Russian nominal, adjectival, and verbal morphology from a structural linguistic perspective. In flectional morphology is viewed against the background of the Russian sound system – its morphology, and phonemic and phonetic realizations. Students are also made acquainted with basic structural linguistic concepts and terminology as it relates to course content. This course is for fourth year Russian students.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 1420 - FOURTH-YEAR RUSSIAN 1

Minimum Credits: 3
Maximum Credits: 3
The course provides an extensive practice in oral communication at the advanced level. It includes discussions of readings on topics of general sociocultural interest, analysis of interviews with native speakers, and discussions of audio- and video-recordings. Home essays, oral presentations, and mock interviews are designed to emphasize students' management of the Russian discourse.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 1430 - FOURTH-YEAR RUSSIAN 2

Minimum Credits: 3
Maximum Credits: 3
The course provides an extensive practice in oral communication at the advanced level. It includes discussions of readings on topics of general sociocultural interest, analysis of interviews with native speakers, and discussions of audio- and video-recordings. Home essays, oral presentations, and mock interviews are designed to emphasize students' management of the Russian discourse.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

RUSS 1624 - RUSSIAN LITERATURE IN MUSIC

Minimum Credits: 3
Maximum Credits: 3
This course explores Russian literature as interpreted in music. Students will read works of Russian poetry and prose, then examine the 'transposition' of the works into media such as opera, ballet, and song cycle. The syllabus includes (among others) such authors as Mussorgsky, Tchaikovsky, Rimsky-Korsakov, and Desiatnikov.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

RUSS 1760 - RUSSIAN DRAMA WORKSHOP

Minimum Credits: 3
Maximum Credits: 3
This course is open to Russian language students at all levels (Russian 1 through graduate level). Students take part in the various aspects of the production of a Russian play to be performed for the public. Student participation varies according to interest (acting, costume and set design, lighting, etc.) And the number of credits for which the student is registered.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: H/S/U Basis
RUSS 1780 - STALINIST CULTURE IN THE 1930'S

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

RUSS 1900 - RUSSIAN INTERNSHIP

Minimum Credits: 3  
Maximum Credits: 3  
This course places the student in a work setting where they can gain practical experience in a supervised training environment.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: LG/SNC Elective Basis

RUSS 1901 - INDEPENDENT STUDY

Minimum Credits: 1  
Maximum Credits: 6  
This course allows students to work independently on individually designed projects.  
Academic Career: Undergraduate  
Course Component: Independent Study  
Grade Component: LG/SNC Elective Basis

RUSS 1903 - SPECIAL TOPICS

Minimum Credits: 3  
Maximum Credits: 3  
This course accommodates various topics in Russian literature and culture.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

SERCRO 0010 - ELEMENTARY BOSNIAN/CROATIAN/SERBIAN 1

Minimum Credits: 3  
Maximum Credits: 3  
This is a four-skills (listening, speaking, reading, writing) practical introduction to the Bosnian/Croatian/Serbian languages.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

SERCRO 0020 - ELEMENTARY BOSNIAN/CROATIAN/SERBIAN 2

Minimum Credits: 4  
Maximum Credits: 4  
This is a four-skills (listening, speaking, reading, writing) practical introduction to the Bosnian/Croatian/Serbian languages, second-semester first-year.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
SERCRO 0030 - INTERMEDIATE BOSNIAN/CROATIAN/SERBIAN 3

Minimum Credits: 3
Maximum Credits: 3
This is a four-skills (listening, speaking, reading, writing) practical introduction to the Bosnian/Croatian/Serbian languages, first-semester, second-year.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SERCRO 0040 - INTERMEDIATE BOSNIAN/CROATIAN/SERBIAN 4

Minimum Credits: 3
Maximum Credits: 3
This is a four-skills (listening, speaking, reading, writing) practical introduction to the Bosnian/Croatian/Serbian languages, second-semester, second-year.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SERCRO 0210 - INTENSIVE BEGINNING CROATIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four-skills intensive course in beginning Croatian language which is to be offered as part of the summer intensive workshops in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0211 - INTENSIVE BEGINNING SERBIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Serbian language which is to be offered as part of the summer intensive workshops in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0212 - BEGINNING BOSNIAN-CROATIAN-SERBIAN PITT-MONTENEGRO

Minimum Credits: 10
Maximum Credits: 10
This is an intensive course in beginning intensive Serbian which meets for six weeks during summer term in Pittsburgh, followed by four weeks of study in Montenegro. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0213 - INTERMEDIATE BOSNIAN-CROATIAN-SERBIAN IN MONTENEGRO
Minimum Credits: 4
Maximum Credits: 4
This is a four week course in intermediate intensive Serbian conducted in Montenegro which follows the six-week Pittsburgh intensive course. Students must complete the prior course or have had at least three semesters of Serbian language, or a prior intermediate-level knowledge of the language to register for this component.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0220 - INTERMEDIATE INTENSIVE SERBIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four-skills intensive course in intermediate Slovak which is offered as part of a summer intensive workshop in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0221 - INTENSIVE INTERMEDIATE CROATIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four-skills intensive course in intermediate Croatian which is offered as a part of a summer intensive workshop in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0223 - INTERMEDIATE INTENSIVE SERBIAN PITT-MONTENEGRO

Minimum Credits: 10
Maximum Credits: 10
This is an intensive course in intermediate intensive Serbian which meets for six weeks during summer term in Pittsburgh, followed by four weeks of study in Montenegro. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0230 - ADVANCED INTENSIVE SERBIAN/CROATIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four-skills intensive course in advanced Serbian language which is to be offered as part of the summer intensive workshops in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0231 - ADVANCED INTENSIVE SERBIAN PITT-MONTENEGRO

Minimum Credits: 10
Maximum Credits: 10
This is an intensive course in advanced intensive Serbian which meets for six weeks during summer term in Pittsburgh, followed by four weeks of study in Montenegro. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0233 - ADVANCED INTENSIVE SERBIAN IN MONTENEGRO

Minimum Credits: 4
Maximum Credits: 4
This is a four week course in advanced intensive Serbian conducted in Montenegro which follows the six-week Pittsburgh intensive course. Students must complete the prior course or have had at least five semesters of Serbian language, or a prior intermediate-level knowledge of the language to register for this component.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0240 - FOURTH YEAR SERBIAN/CROATIAN/BOSNIAN

Minimum Credits: 6
Maximum Credits: 6
This is a fourth-year language course in Serbian/ Croatian/ Bosnian open to those with an advanced knowledge and to heritage speakers who wish to improve their written and spoken communicative competence.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SERCRO 0400 - ADVANCED BOSNIAN/CROATIAN/SERBIAN 5

Minimum Credits: 3
Maximum Credits: 3
This course (third-year first-semester Bosnian/Croatian/Serbian) is a systematic review of grammar and phraseology, which develops the student's vocabulary, grammar and communicative competence.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SERCRO 0410 - ADVANCED BOSNIAN/CROATIAN/SERBIAN 6

Minimum Credits: 3
Maximum Credits: 3
This course (third-year second-semester Bosnian/Croatian/Serbian) is a systematic review of grammar and phraseology, which develops the student's vocabulary, grammar and communicative competence.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SERCRO 1240 - FOURTH YEAR SERBIAN/CROATIAN/BOSN

Minimum Credits: 6
Maximum Credits: 6
This is a fourth-year language course in Serbian/ Croatian/ Bosnian open to those with an advanced knowledge and to heritage speakers who wish to improve their written and spoken communicative competence.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: Satisfactory/No Credit
SERCRO 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 4
This course allows students to work independently on individually designed projects in the Serbian and Croatian languages.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

SLAV 0202 - BEGINNING INTENSIVE CZECH PITT-PRAGUE

Minimum Credits: 10
Maximum Credits: 10
This is an intensive course in beginning intensive Czech which meets for six weeks during summer term in Pittsburgh, followed by four weeks of study in Prague, Czech republic. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0210 - BEGINNING INTENSIVE TURKISH

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Turkish which is offered as part of the summer intensive workshops in East European languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0211 - INTENSIVE BEGINNING HUNGARIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Hungarian which is offered as part of the summer intensive workshops in East European languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0212 - INTENSIVE BEGINNING CZECH

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Czech language which is to be offered as part of the summer intensive workshop in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0213 - BEGINNING INTENSIVE BULGARIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four-skills intensive course in beginning Bulgarian which is offered as part of a summer intensive workshop in Slavic languages.
Academic Career: Undergraduate
SLAV 0216 - BEGINNING INTENSIVE BULGARIAN PITT/BULGARIA

Minimum Credits: 10
Maximum Credits: 10
This is a course in beginning intensive Bulgarian language, the first six weeks held in Pittsburgh as part of the summer language institute, followed by four weeks of language study in Sofia, Bulgaria.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0217 - BEGINNING INTENSIVE LATVIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Latvian which is offered as part of the summer intensive workshops in East European languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0218 - BEGINNING INTENSIVE LITHUANIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Lithuanian which is offered as part of the summer intensive workshops in East European languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0219 - BEGINNING INTENSIVE ESTONIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Estonian which is offered as part of the summer intensive workshops in East European languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0222 - INTERMEDIATE INTENSIVE CZECH - PRAGUE

Minimum Credits: 6
Maximum Credits: 6
This is an intensive course in intermediate intensive Czech which meets for six weeks during summer term in Prague, Czech republic. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0223 - INTM INTNSV BULGARIAN/BULGARIA
Minimum Credits: 4
Maximum Credits: 4
This is a continuation of SLAV 0213, beginning intensive Bulgarian and is equivalent to the first semester of intermediate second-year Bulgarian. This segment will be conducted in Bulgaria and is part of the summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0224 - BEGINNING HUNGARIAN PITT-HUNGARY

Minimum Credits: 10
Maximum Credits: 10
This is an intensive course in beginning intensive Hungarian which meets for six weeks during summer term in Pittsburgh, followed by four weeks of study in Debrecen, Hungarian. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0225 - INTERMEDIATE HUNGARIAN IN HUNGARY

Minimum Credits: 4
Maximum Credits: 4
This is an intensive course in intermediate intensive Hungarian which meets for four weeks during summer term in Debrecen, Hungary. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0227 - INTERMEDIATE INTENSIVE LATVIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in intermediate Latvian which is offered as part of the summer intensive workshops in East European languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0228 - INTERMEDIATE INTENSIVE LITHUANIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in intermediate intensive Lithuanian which is offered as part of the summer intensive workshops in East European languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0229 - INTERMEDIATE INTENSIVE ESTONIAN

Minimum Credits: 6
Maximum Credits: 6
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
SLAV 0232 - ADVANCED INTENSIVE CZECH - PRAGUE

Minimum Credits: 6
Maximum Credits: 6
This is an intensive course in advanced intensive Czech which meets for six weeks during summer term in Prague, Czech Republic. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLAV 0660 - SCI-FI: EAST AND WEST

Minimum Credits: 3
Maximum Credits: 3
This course compares Slavic and Anglophone science fiction to assess how a given culture's dominant values are articulated in a popular genre that enjoys different status in East and West. Those values emerge in works that imaginatively posit "fantastic" situations rooted in biological, spatial, and temporal explorations beyond those verified by science. On the basis of films, film clips, TV shows, stories, novellas, and novels we shall discuss such topics as utopia, progress, human perfectibility, the limits of science, and the nature of knowledge.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SLAV 0880 - VAMPIRE: BLOOD AND EMPIRE

Minimum Credits: 3
Maximum Credits: 3
This course examines the phenomenon of vampirism in verbal and visual texts from different time periods in various cultures (Russia, Poland, France, England, America). We will analyze stories, novels, and films focusing on vampires from a variety of critical perspectives, contextualizing the works in the cultures that produced them.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SLAV 1050 - COMPUTATIONAL METHODS IN HUMANITIES

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the use of computational modeling and programming to conduct text-based research in the humanities. Course goals include 1) learning how to identify research questions in the humanities that are amenable to computational analysis and processing and 2) designing and implementing xml-based computational systems to explore those questions. No prior programming experience or knowledge of foreign languages required.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SLAV 1225 - BEHIND BARS: CROSS CULTURAL REPRESENTATIONS OF PRISON IN THE 20TH CENTURY

Minimum Credits: 3
Maximum Credits: 3
This course examines cultural works produced in and about prison in the 20th century, addressing the function of art within the context of incarceration. In structure the course is composed of three parts: prison writings and criminal culture in America, memoirs from the forced-labor camps of the soviet gulag, and narratives of holocaust concentration camps. This structure allows for a comparison of cultures-- American, Russian, and European--as well as identities-- racial, gender, and religious.
SLAV 1710 - UNDERGRADUATE TEACHER TRAINING

Minimum Credits: 1
Maximum Credits: 3
This is an elective course for gaining teaching experience under the supervision of the Slavic department faculty.

SLAV 1720 - UNDERGRADUATE TEACHING

Minimum Credits: 1
Maximum Credits: 3
This is an elective course for students who wish to gain teaching experience under the supervision of the Slavic department faculty.

SLAV 1865 - THE YEAR COMMUNISM CRUMBLED

Minimum Credits: 3
Maximum Credits: 3
This course is structured around the chronology of events in central and East Europe leading up to the demise of the old soviet union in 1991. The course will follow the results of the dramatic changes in Poland, Czechoslovakia, East Germany, Hungary, Romania, Bulgaria, Yugoslavia, and some of the former republics of the Soviet Union through the present time.

SLAV 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
This course allows students to work independently on individually designed projects.

SLI 0020 - BEGINNING INTENSIVE PERSIAN (FARSI)

Minimum Credits: 8
Maximum Credits: 8
This is a four skills intensive course in beginning Persian (Farsi) which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.

SLI 0030 - BEGINNING INTENSIVE ARABIC
Minimum Credits: 8
Maximum Credits: 8
This is a four skills intensive course in beginning Arabic which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0040 - BEGINNING INTENSIVE TURKISH

Minimum Credits: 8
Maximum Credits: 8
This is a four skills intensive course in beginning Turkish which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0050 - BEGINNING INTENSIVE HUNGARIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Hungarian which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0052 - BEGINING HUNGARIAN PITT-HUNGARY

Minimum Credits: 10
Maximum Credits: 10
This is an intensive course in beginning intensive hungarian which meets for six weeks during summer term in Pittsburgh, followed by four weeks of study in Debrecen, Hungarian. It is part of the Slavic, East European and near eastern summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0053 - INTERMEDIATE HUNGARIAN IN HUNGARY

Minimum Credits: 4
Maximum Credits: 4
This is an intensive course in intermediate intensive Hungarian which meets for four weeks during summer term in debrecen, hungary. It is part of the Slavic, East European and near eastern summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0062 - BEGINNING INTENSIVE LITHUANIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Lithuanian which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.
SLI 0063 - BEGINNING INTENSIVE ESTONIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Estonian which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0064 - INTERMEDIATE INTENSIVE LATVIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in intermediate Latvian which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0065 - INTERMEDIATE INTENSIVE LITHUANIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in intermediate intensive Lithuanian which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0066 - INTERMEDIATE INTENSIVE ESTONIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in intermediate intensive Estonian which is offered as part of the summer intensive workshops in Slavic, East European and near eastern languages.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLI 0067 - BEGINNING INTENSIVE LATVIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Latvian which is offered as part of the summer intensive workshops in East European languages.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis
SLOVAK 0010 - ELEMENTARY SLOVAK 1

Minimum Credits: 3
Maximum Credits: 3
This four-skills language course introduces the student to the fundamentals of Slovak pronunciation and speaking, reading, writing and listening, with emphasis on practical conversation. The present tense of verbs, the plural of nouns, and the gradation of adjectives and adverbs is covered.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SLOVAK 0020 - ELEMENTARY SLOVAK 2

Minimum Credits: 3
Maximum Credits: 3
A continuation of Slovak 0010, this course extends the grammatical coverage to include verbal aspects, numeral expressions, and the locative, dative, and genitive cases. Emphasis continues to be on developing spoken language competence.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SLOVAK 0030 - INTERMEDIATE SLOVAK 3

Minimum Credits: 3
Maximum Credits: 3
The continuation of Slovak 0020, this course focuses more on written Slovak and developing listening comprehension than in the first-year course. Attention is paid to developing a good control of basic idioms, and to the formation of participles.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SLOVAK 0040 - INTERMEDIATE SLOVAK 4

Minimum Credits: 3
Maximum Credits: 3
The continuation of Slovak 0030, this course attempts to round out the student's basic oral competence in relation to specific matters of Slovak culture and reality. For many students, this course is preparatory to summer study in Slovakia.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SLOVAK 0210 - INTENSIVE BEGINNING SLOVAK

Minimum Credits: 6
Maximum Credits: 6
This is a four-skills intensive course in beginning Slovak language which is to be offered as part of the summer intensive workshops in Slavic languages.

Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLOVAK 0211 - BEGINNING INTENSIVE SLOVAK PITT/SLOVAKIA
Minimum Credits: 10
Maximum Credits: 10
This is an intensive course in intermediate intensive Slovak which meets for six weeks during summer term in Pittsburgh, followed by four weeks of
study in Slovakia. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SU3 Elective Basis

SLOVAK 0212 - BEGINNING INTENSIVE SLOVAK IN SLOVAKIA

Minimum Credits: 4
Maximum Credits: 4
This is a four-week course in beginning intensive Slovak conducted in Slovakia which follows the six-week Pittsburgh intensive course. Students
must complete the prior course or have had at least one semester of Slovak language, or a prior elementary knowledge of the language to register for
this component.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLOVAK 0220 - INTENSIVE INTERMEDIATE SLOVAK

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in intermediate Slovak which is offered as part of the summer intensive workshops in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLOVAK 0221 - INTERMEDIATE INTENSIVE SLOVAK PITT/SLOVAKIA

Minimum Credits: 10
Maximum Credits: 10
This is an intensive course in intermediate intensive Slovak which meets for six weeks during summer term in Pittsburgh, followed by four weeks of
study in Slovakia. It is part of the Russian and East European summer language institute.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLOVAK 0222 - INTERMEDIATE INTENSIVE SLOVAK IN SLOVAKIA

Minimum Credits: 4
Maximum Credits: 4
This is a four week course in intermediate intensive Slovak conducted in Slovakia which follows the six-week Pittsburgh intensive course. Students
must complete the prior course or have had at least three semesters of Slovak language, or a prior intermediate-level knowledge of the language to
register for this component.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

SLOVAK 0230 - ADVANCED INTENSIVE SLOVAK

Minimum Credits: 6
Maximum Credits: 6
This is a four-skills intensive course in advanced Slovak which is offered as part of a summer intensive workshop in Slavic languages.
SLOVAK 0232 - ADVANCED INTENSIVE SLOVAK/BRATISLAVA

Minimum Credits: 6
Maximum Credits: 6
This is an intensive course in advanced intensive Slovak language which meets for six weeks during summer term in Bratislava, Slovak republic. 140 Contact hours. It is part of the Russian and East European summer language institute.

SLOVAK 0380 - SLOVAK TRANSATLANTIC CULTURES

Minimum Credits: 3
Maximum Credits: 3
Slovak European history and the interaction of Slovak and American cultures during the 120-year history of Slovak immigration is conveyed through readings in Slovak and Slovak-American literature, and through issues in literary theory that concern this theme. The course is structured around the history of Slovak, and in a broader cultural sense central European, immigration to the United States with a special focus on Pittsburgh. The students are encouraged to investigate Pittsburgh's rich ethnic heritage and to research and write on topics tailored to their individual interests.

SLOVAK 0400 - ADVANCED SLOVAK 1

Minimum Credits: 3
Maximum Credits: 3
This course extends grammatical and conversational skills of those with an intermediate knowledge of Slovak. The course also covers aspects of Slovak culture and makes extensive use of contemporary texts from Slovakia. The students also learn elementary translation skills. Emphasis is put on fluency in conversation and on comprehension of unedited original reading material from newspapers and magazines.

SLOVAK 0410 - ADVANCED SLOVAK 2

Minimum Credits: 3
Maximum Credits: 3
This course continues in developing skills learned in advanced Slovak 1. It extends the range of conversational topics and teaches more complex grammatical structures. It builds elementary skills needed to write brief essays in Slovak. The course also expands the students' translation skills and reading and listening comprehension.

SLOVAK 0890 - SLOVAK, CZECH, AND CENTRAL EUROPEAN FILM

Minimum Credits: 3
Maximum Credits: 3
The course presents central European filmmaking in its cultural context, and central European (Czech, Slovak, Hungarian, etc.) Culture through film. The students learn to discuss them in their cultural context against the panorama of life in central Europe, as well as from the American perspective.
The focus is both on film aesthetics, and on the social implications of the content of the films, which was considered crucial by central European directors, screenwriters, and audiences.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SLOVAK 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
This course allows students to work independently on individually designed projects.

Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

UKRAIN 0010 - ELEMENTARY UKRAINIAN 1

Minimum Credits: 3
Maximum Credits: 3
A four-skill language course, this course introduces the student to the fundamentals of Ukrainian pronunciation and speaking, reading, writing and listening, with emphasis on practical conversation. The present tense of verbs, the plural of nouns, and the gradation of adjectives and adverbs is covered.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

UKRAIN 0020 - ELEMENTARY UKRAINIAN 2

Minimum Credits: 3
Maximum Credits: 3
A continuation of elementary Ukrainian 1, this four-skill language course extends the grammatical coverage to include verbal aspect, numeral expressions, and the locative, dative and genitive cases. Emphasis continues to be on developing spoken language competence.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

UKRAIN 0030 - INTERMEDIATE UKRAINIAN 1

Minimum Credits: 3
Maximum Credits: 3
The continuation of elementary Ukrainian 2, this course focuses more on written Ukrainian and developing listening comprehension than in the first-year course. Attention is paid to developing a good control of basic idioms, and to the formation of participles.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

UKRAIN 0040 - INTERMEDIATE UKRAINIAN 2

Minimum Credits: 3
Maximum Credits: 3
The continuation of intermediate Ukrainian 1, this course attempts to round out the student's basic oral competence in relation to specific matters of Ukrainian culture and reality. For many students, this course is preparatory to summer study in the Ukraine.

Academic Career: Undergraduate
UKRAIN 0210 - INTENSIVE BEGINNING UKRAINIAN

Minimum Credits: 6
Maximum Credits: 6
This is a four skills intensive course in beginning Ukrainian which is offered as part of the summer intensive workshops in Slavic languages.
Academic Career: Undergraduate
Course Component: Workshop
Grade Component: LG/SNC Elective Basis

UKRAIN 0400 - ADVANCED UKRAINIAN

Minimum Credits: 3
Maximum Credits: 3
This is a course in advanced Ukrainian language (third-year, first semester) and is a four-skill course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

UKRAIN 0410 - ADVANCED UKRAINIAN 2

Minimum Credits: 3
Maximum Credits: 3
This is a continuation (second semester, third year) course in advanced Ukrainian language.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

UKRAIN 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
This course allows students to work independently on individually designed projects.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

SOCWRK 1000 - INTRODUCTION TO SOCIAL WORK

Minimum Credits: 3
Maximum Credits: 3
Explores social work in terms of what the profession seeks (its goals); what it does to achieve those goals (its direct practice methods); which principles are to be reflected in all professional social work activity (its values and ethics); how the profession evolved (its history); which social issues are of particular concern to social workers (its special mission re: poverty, racism, sexism, among others); what types of agencies/services involve professional social workers (its fields of practice); and how effective is professional social work (its evaluative systems). This is a service learning course and requires 45 hours of volunteer service as part of the course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: College of General Studies students only.
SOCWRK 1001 - INTRODUCTION TO SOCIAL WORK IN CIVIC ENGAGEMENT

Minimum Credits: 1
Maximum Credits: 3
Explores social work in terms of what the profession seeks (its goals); what it does to achieve those goals (its direct practice methods); which principles are to be reflected in all professional social work activity (its values and ethics); how the profession evolved (its history); which social issues are of particular concern to social workers (its special mission re: poverty, racism, sexism, among others); what types of agencies/services involve professional social workers (its fields of practice); and how effective is professional social work (its evaluative systems). This is a service learning course and requires 45 hours of volunteer service as part of the course. This course is required for only students participating in the Upperclass Service to Others Living Learning Community (LLC).

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

SOCWRK 1005 - FOUNDATIONS OF THE WELFARE STATE

Minimum Credits: 3
Maximum Credits: 3
The objective of this course is to examine the nature and structure of social welfare services and institutions; historical and cultural foundations of how societies have provided welfare services for people; current issues in the provision of services.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

SOCWRK 1006 - POLICY ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
Engages students in analyses of the nature and impact of economic/political/social ideologies and forces which shaped the development of American social welfare policies and services from 1935 to present, including policies/services related to personal and social services, health and mental health, income redistribution and income maintenance, employment, and criminal justice and including discussions of the processes of policymaking itself. This is a service learning course and requires 45 hours of volunteer service as part of the course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SOCWRK 1000 and 1005

SOCWRK 1008 - ETHNICITY AND SOCIAL WELFARE

Minimum Credits: 3
Maximum Credits: 3
This course provides an understanding and working knowledge of the interface of ethnicity and race and the social welfare system. Critical ways in which the social welfare system has been shaped by ethnic and racial factors will be discussed, as well as the effects of race and ethnicity on the ways in which various ethnic and racial groups use the social welfare system, ways in which services/resources are allocated, and reasons that propel individuals and groups to seek out social services and resources.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: School of Social Work students only.

SOCWRK 1009 - CASE MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the fundamental aspects of case management (service coordination), including common case management roles, processes, responsibilities, and employment challenges. Major content areas include: case management roles (including advocate, broker, resource coordinator), the roles and responsibilities of the multidisciplinary team (including nurses, social worker, physicians, and other disciplines), case management with special populations (forensic, geriatric, children, diverse populations), and the responsibilities of a case manager working in health care and mental health settings. Students will be introduced to the employment challenges of case management (types of programs that hire case managers, workforce retention issues, expectations of case manager, and job satisfaction). Students will develop familiarity with how case managers and clients interface with individual, group, and family systems. Students will develop knowledge of case management ethics and explore common ethical dilemmas and boundaries issues that confront case managers.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: SOCWRK 1010 or PSY 1210 (MINGRADE: 'C-' for all listed Courses); Plan: Psychology(BS) or Social Work(BSW); LVL: Jr, Sr

SOCWRK 1010 - PRA MODL:HELP PEPL HELP SELVES

Minimum Credits: 3  
Maximum Credits: 3  
This course identifies generic principles of social work methods of intervention within a systems frame of reference. Didactic and experiential methods will be used.  
Academic Career: UGRD  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: School of Social Work students only.

SOCWRK 1011 - INTRODUCTION TO GENERALIST METHODS: SOCIAL WORK WITH INDIVIDUALS AND FAMILIES

Minimum Credits: 3  
Maximum Credits: 3  
Teaches interventive skills in casework with individuals and families, with emphasis on the problem-solving psychosocial, and behavioral approaches.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Social Work

SOCWRK 1012 - SOCIAL WORK WITH COMMUNITIES AND ORGANIZATIONS

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces the student to macro practice through understanding and analyzing organizations and the relationship of organizations to the urban community. The focus is on the acquisition of practice skills in community organization, e.g. locality development, social planning, and social action.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PLAN: Social Work (BSW) ; PREQ: SOCWRK 1011

SOCWRK 1013 - SOCIAL WORK WITH GROUPS

Minimum Credits: 3  
Maximum Credits: 3  
Introduces the student to social group work as a method in social work practice. The history of the development of groups in social work with
emphasis on practice in the United States is also presented. Remedial, reciprocal and social goals models will be analyzed in relation to the worker's use of self, group, structure, group process, phase development and the agency functions used to achieve individual and group goals.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: SOCWRK 1011 (MIN GRADE 'C-'); PLAN: Social Work

**SOCWRK 1015 - HUMAN BEHAVR & SOCL ENVIRONMENT**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

The objective of this course is to view the range of human needs and behavior as related to various conditions of the urban scene. Examines social, political, economic, and cultural factors which influence individual, group, and community social functioning.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** School of Social Work students only.

**SOCWRK 1020 - INTRODUCTION TO SOCIAL WORK RESEARCH**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This course is oriented to the reader and user of social work research. Using standard methodology texts and actual research studies, the lectures and discussions are designed to enable students to read and assess studies relevant to social work practice. In this process, the development and conduct of social research, as it applies to the issues and concerns of social work practice, is described and analyzed.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: Any Statistics Course; PLAN: Social Work (SOCWRK-BSW)

**SOCWRK 1024 - PRACTICUM SEMINAR AND LAB 1**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

The objective of this course is for students to be able to identify their feelings and behaviors as well as those of their clients and colleagues which affect the course of their interventions within their practice area.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade  
**Course Requirements:** CREQ: SOCWRK 1025

**SOCWRK 1025 - PRACTICUM 1**

- **Minimum Credits:** 6  
- **Maximum Credits:** 6  

Placement in an agency will be made according to interest and educational need. Evaluation will be made of the student's ability to use classroom theories to enhance service.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade  
**Course Requirements:** School of Social Work students only.

**SOCWRK 1026 - PRACTICUM SEMINAR AND LAB 2**
The purpose of this course is to facilitate the student's development of a professional self through the integration of classroom and practicum learning and to provide students an opportunity to amplify their practice learning beyond their immediate placements as a result of guided interactional experiences with other students.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
Course Requirements: PREQ: SOCWRK 1024 (MIN GRADE 'C-'); CREQ: SOCWRK 1027

**SOCWRK 1027 - PRACTICUM 2**

Minimum Credits: 6
Maximum Credits: 6
A continuation of Practicum 1.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: Letter Grade
Course Requirements: School of Social Work students only.

**SOCWRK 1030 - DIRECTED STUDY**

Minimum Credits: 1
Maximum Credits: 6
Directed study provides students with opportunity to explore in-depth a specific social work area beyond that available in regularly scheduled courses. Students must secure a faculty mentor, develop a written plan and receive approval of the plan in order to register for a directed study.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis

**SOCWRK 1035 - GLOBAL PERSPECTIVES SOCIAL WORK**

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce students to the international dimensions of the human condition; the global context of responses to human need; and social development as an approach to global social work practice.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: SOCWRK 1000

**SOCWRK 1058 - ECONOMICS AND SOCIAL WORK**

Minimum Credits: 3
Maximum Credits: 3
This course provides an understanding of basic economic theory, and discusses its application to social welfare policy.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: PREQ: SOCWRK 1000

**SOCWRK 1059 - CHILD AND FAMILY ADVOCACY**
Minimum Credits: 3
Maximum Credits: 3
This is a practical skills course in legal advocacy for non-lawyers. The emphasis is on practical techniques and courtroom skills to enhance the professional effectiveness of social workers in the courtroom setting. Typical areas of discussion include rules of evidence, legal procedure, expert witnesses, interview techniques, cross-examination, law reform, case review and readings and the legal rights of children.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SU3 Elective Basis
Course Requirements: School of Social Work students only.

SOCWRK 1063 - AFRICAN-AMERICAN HEALTH ISSUES

Minimum Credits: 3
Maximum Credits: 3
Course will focus on black health issues from analytical, theoretical and practical perspectives. These perspectives will be introduced through cross-examination of health topics which are critical to the black population, the development of health policies and conceptual models for health promotion and disease prevention.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: School of Social Work students only.

SOCWRK 1079 - CHILD WELFARE SERVICES

Minimum Credits: 3
Maximum Credits: 3
Engages students in the study of child welfare, its historical roots, the services provided to families and children, the problems and policy issues in the current child welfare system and culturally competent practice. The study will focus on the etiology, rationale for service, and the current and future provision of services, with emphasis given to legislative mandates for service.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SOCWRK 1000

SOCWRK 1080 - BROWNE LEADERSHIP FELLOWS SEMINAR

Minimum Credits: 1
Maximum Credits: 1
This seminar engages students in a practice that will lead to their own professional growth and development. The primary focus of this seminar will be on the development of the knowledge, values, and skills of a professional. During seminars, browne fellows will begin program design and implementation strategies for the summer program. Fellows will have the opportunity to hear from experts in the field but spend significant time exploring the topics. The final assessment is focused on a presentation and poster session. Only students that have applied to and been accepted into the Browne Leadership Fellows program are eligible to enroll in this course.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SU3 Elective Basis

SOCWRK 1088 - SPECIAL TOPICS

Minimum Credits: 1
Maximum Credits: 3
Given the changing nature of generalist practice, the BASW program occasionally offers courses in new and/or unique content areas. This course is designed to provide skill and knowledge content not covered in other BASW courses.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SU3 Elective Basis

SOC 0002 - SOCIOLOGY OF EVERYDAY LIFE

Minimum Credits: 3  
Maximum Credits: 3  
This course considers questions of individual behavior and social interaction together with societal phenomena. The interactions among these matters is discussed.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SU3 Elective Basis

SOC 0003 - TECHNOLOGY AND SOCIAL CHANGE

Minimum Credits: 3  
Maximum Credits: 3  
To acquaint the student with major sociological concepts, approaches and theories that are applicable to the analysis of the interaction between technology and society. The discussions are organized around three issues; 1. The effects of technology upon various aspects of the social structure and functioning, 2. The social conditions which lead to innovations and the diffusion of innovations throughout society, and 3. Technology assessment and environmental impact statement processes as they bear on current national decisions bearing on technology/society interfaces.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SN Elective Basis

SOC 0005 - SOCIETIES

Minimum Credits: 3  
Maximum Credits: 3  
This introductory course is devoted to furthering an understanding of life in America today by comparing it to a variety of societies worldwide. Among the societal aspects explored; political and economic systems, cultural styles, major religions and religious trends.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SN Elective Basis

SOC 0007 - SOCIAL PROBLEMS

Minimum Credits: 3  
Maximum Credits: 3  
The major aims of this course are to understand the nature of important social problems in American society and analyze their causes and consequences. The two competing perspectives, one, that social problems are created when individuals fail to conform to societal norms, and two, that social problems are caused when institutions fail to meet changing needs and aspirations of individuals will be used in our analysis. Future trends and policy alternatives toward amelioration will be examined.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SN Elective Basis

SOC 0010 - INTRODUCTION TO SOCIOLOGY

Minimum Credits: 3  
Maximum Credits: 3  
This course introduces the student to the discipline of sociology, its development, theories, major findings, and to the sociological interpretation of modern society. Emphasis will be given to the importance of careful empirical investigation for the understanding of recent social and cultural changes. Students should be prepared to encounter basic issues in sociological method and in theory; an inclination toward systematic and abstract
reasoning will help.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 0150 - SOCIAL THEORY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The aim of this course is to provide a survey of major developments in sociological theory in recent times. The classic background for these developments is included as part of the course. Lectures, readings and discussions help the student to acquire a grasp of the significance of theoretical analysis in sociology and of basic sociological problems addressed by a variety of theorists.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 0230 - SOCIAL RESEARCH METHODS**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students begin to learn to do social research in this course. They learn how to define an appropriate problem, select an appropriate method, collect and analyze data, discuss their results, and draw conclusions. Students study both quantitative and qualitative methods.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 0312 - SCIENCE IN SOCIETY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The course aims at conveying an understanding of the social significance of science in modern society, dealing with questions of why science is valued, how society supports science, how scientists are selectively recruited and trained, how scientific activity is organized, and how scientific knowledge is utilized in society, especially in the United States and Europe. Focus is on the values attached to science by society, the interest in making new discoveries, organization of research, diffusion and transmission of scientific knowledge.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 0317 - GLOBALIZATION**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The aim is to analyze the dynamics of civilization in today's interconnected world. How is people's social and cultural life shaped by their position in the world, by local traditions and distant forces? How have the independently coexisting civilizations of earlier centuries become incorporated into a global civilization in which colonial empires and the communist regime have given way to wider democracy and a capitalist regime with global dynamics? How is Western culture (beliefs, values and symbols) disseminated and embraced, modified or resisted in non-Western societies?

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 0333 - IDEOLOGIES AND SOCIAL CHANGE**

**Minimum Credits:** 3  
**Maximum Credits:** 3
The role of ideology in promoting, thwarting or preventing change is examined. An inquiry is made into how an ideology is formulated and implemented and what channels are used for its diffusion. Various kinds of political, religious and scientific ideologies are analyzed.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### SOC 0339 - SOCIOLOGY OF RELIGION

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will compare and contrast major classical and modern sociological theories of religion, including discussion of the renewed focus on religion in mainstream, general theory. Attention will be narrowed to a focus on relation between religions, states and individuals in comparative and historical perspective.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### SOC 0351 - SOCIAL CHANGE

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Theories of social change will be evaluated in the light of case studies drawn from history and the contemporary world.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### SOC 0352 - SOCIAL MOVEMENTS

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course offers ideological, structural, and functional treatment of dominant American movements for social and cultural change in our contemporary world.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### SOC 0359 - GLOBAL ISSUES AND THE UNITED NATIONS

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

### SOC 0411 - DECEPTION AND BETRAYAL

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students learn what sociologists and social psychologists have discovered about deception and betrayal in personal relationships, social institutions, national affairs, and international affairs.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
SOC 0424 - SMALL GROUPS

Minimum Credits: 3
Maximum Credits: 3
In this course, the study of small groups is viewed as one means of building general sociological knowledge. Such groups exhibit basic social processes, such as the emergence of status structures and of group cultures. Basic theory and research methods on such groups are treated. It is likely that the readings will include case studies of real groups that illustrate how group processes and structures are analyzed.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0431 - BUREAUCRACIES

Minimum Credits: 3
Maximum Credits: 3
This course examines bureaucratic organizations of all types (industrial, commercial, governmental, religious, educational, social welfare, etc.) giving special attention to decision-making. People make decisions according to bureaucratic rules, in problem-solving groups, and in interest groups which seek to win advantages for themselves and their members. Decisions and other organizational acts will be studied sociologically.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0432 - WEALTH AND POWER

Minimum Credits: 3
Maximum Credits: 3
The interdependence of these two key sociological concepts is discussed in the context of American society. The role of the multi-national corporation as the most important institution in capitalist societies is examined. The pervasive power of some is contrasted with the generalized powerlessness of the majority.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0434 - POLITICAL SOCIOLOGY

Minimum Credits: 3
Maximum Credits: 3
This course examines the relationship between political institutions and the institutions of the economy, family, education, religion, and stratification. With a major focus on American society and the conditions underlying stable democracy, these relationships are studied in historical and cross-societal comparative perspective as well as in terms of a society's location in the system of international relations.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0436 - SOCIAL ASPECTS OF SEXUALITY

Minimum Credits: 3
Maximum Credits: 3
Students consider the social analysis of human sexual behavior and experience. Topics considered include sexual motivation, masturbation, premarital intercourse, marital intercourse, extramarital intercourse, homosexuality, and sexual norms and values.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
SOC 0438 - SOCIOLOGY OF THE FAMILY

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the sociological perspective on the family and analyzes how the structure and nature of family life are shaped by larger historical and social forces. We will look at how changes in the economy and technology affect the family; how ideas concerning gender roles affect male/female relationships and the socialization of children; how race, ethnicity, and class shape family life; and the wide variety of family forms, historical and contemporary.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0444 - URBAN SOCIOLOGY

Minimum Credits: 3
Maximum Credits: 3
The modern city is simultaneously many different things. It is an assortment of neighborhoods, it is a workshop with factories and offices, it is a crisscross of transportation arteries, it is a marketplace for the interplay of economic interests, it is an object which several different governments try to understand and control, and it is an astonishing mixture of religious, racial, ethnic, recreational, avocational, professional, educational, medical, political, social, and deviant communities. This urban complex will be studied with a sociological approach.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0446 - SOCIOLOGY OF GENDER

Minimum Credits: 3
Maximum Credits: 3
This course will analyze the various processes and institutions through which gender roles are defined and shaped in our society. It will analyze the interaction between individual conceptions of gender and larger social institutions such as the family, the workforce, the media, religion, etc. The current changes in these roles will be related to changes in other social institutions. We will also examine the multiple forms of inequality in our society--based on sex, race, class, and sexual preference--and see how they interact.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0460 - RACE AND ETHNICITY

Minimum Credits: 3
Maximum Credits: 3
This is a course presenting the central sociological interpretations of majority/minority relations. The course begins with a consideration of minorities around the world. With world minorities as a frame of reference, the course turns to the United States and its special opportunities and problems.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0465 - SOCIOLOGY OF SPORTS

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is threefold; first, it is intended to provide the student with a sound introduction to the emerging field of the sociology of sport; second, it applies a sociological perspective to analyze sport as an institution and element of the social order of society; and third, it seeks to demonstrate that sport is a microcosm of the larger society and can neither be isolated nor insulated from the broader social currents.

Academic Career: Undergraduate
SOC 0471 - DEVIANCE AND SOCIAL CONTROL

Minimum Credits: 3
Maximum Credits: 3
This course raises questions about what is "deviant" and how certain actions and beliefs come to be considered deviant. It also raises questions concerning the social, structural and cultural determinants of the decision to view something as "deviant" and in need of "control". The course explores changes in the definition of behavior which lead the same behaviors to be considered 'sins', 'crimes', 'illnesses', and 'alternative life-styles'.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0472 - INTRODUCTION TO CRIMINOLOGY

Minimum Credits: 3
Maximum Credits: 3
Criminology refers to the scientific study of crime, its causes, and social responses to it. This course provides a broad overview of the study of crime. It examines the legal definitions and elements of crime; surveys the major categories of crime, i.e. predatory and non-predatory acts; reviews the major measures of crime; identifies the major correlates of crime, reviews and assesses the major theories of crime; differentiates types of offenders and explores various dimensions of their offending; and examines and evaluates the workings of the criminal justice system.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0473 - SOCIOLOGY OF GLOBALIZATION AND HEALTH

Minimum Credits: 3
Maximum Credits: 3
People's health is increasingly tied to global forces such as climate change, globalization of food production and distribution, migration, and international finance and trade policies. The course explores how globalization impacts health outcomes in the United States and around the world. Students learn about how global trade and international regulations affect governments' ability to control the "problems without passports" that impact the health and well-being of their populations. In addition, we consider factors shaping inequalities in access to health services.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0474 - SOCIETY AND THE LAW

Minimum Credits: 3
Maximum Credits: 3
Every society regulates behavior and the means, i.e. Either informal or formal, with which this is done varies according to level of social development. This course examines the regulation of behavior in primitive, transitional, and modern societies and traces the development of law and legal systems and their relationship to different characteristics of social development. We will examine legal jurisprudence and the application of the principles of these philosophies and explore how they have shaped legal action.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 0475 - SOCIOLOGY OF AGING

Minimum Credits: 3
Maximum Credits: 3
This course studies the fate of being old in American society in terms of income-adequacy, participation in political life, family relations, the status of retirement as an institution, health, the loss of independence and life in nursing homes. These and related issues are examined in cross-national perspective to assess the level and some nationally distinctive ways in which modern society cares for its elderly.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 0477 - MEDICAL SOCIOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is a course on socio-cultural aspects of health, illness, disease and (medical) treatment in American society. The historical transformation of American medicine into a powerful sovereign profession with unparalleled authority, autonomy and control over all aspects of health and illness will be examined. On the basis of this historical survey, recent empirical studies of distribution of health, disease and medical care will be examined as well as specific substantive issues and contemporary debates.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 0490 - MASS MEDIA**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course deals with the many faceted roles of mass media in our society and explains how and why the media have achieved their present prominence and influence on our lives.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 1002 - SOCIOLOGY HONORS SEMINAR**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
The search for identities is an inseparable component of the postmodern "global" world. Individual and collective identities are in a constant state of formation and change. Using comparative case studies, we will examine various kinds of identity construction and transformation, including identities of race, ethnicity, nation and gender. Through the application of sociological insights, we hope to improve our understanding of these complicated processes.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (SOC 0150 and 0230); PLAN: Sociology(BA); CUM GPA '3.25'

**SOC 1107 - CULTURAL SOCIOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course begins with a survey of the treatment of culture in a variety of schools of modern social science. Among the schools of thought to be surveyed are: Habermas-centered critical theory; Marxist and neoMarxist approaches including those inspired by the Frankfurt school, Gramsci, Lukacs and Wallerstein; action and functional approaches (derived in part from weber and Durkheim) centered upon the works of Parsons, Geertz, Bellah, Schluchter et al.; Structuralist approaches, including those of Sahlins and Foucault.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
SOC 1112 - ECONOMIC SOCIOLOGY

Minimum Credits: 3
Maximum Credits: 3
The aim of this course is to provide a broad macrosociological perspective on the economic aspects of societies. The necessary concepts of macrosociology are introduced as needed. Comparative studies in economy and society are supplemented by analysis of issues and problems in the sociological analysis of modern economic structures. The course may include special foci ranging from the capitalist world system to the changing nature of the work place.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1114 - QUALITATIVE RESEARCH METHODS

Minimum Credits: 3
Maximum Credits: 3
Qualitative research methods (sociology 1114) provides an introduction to qualitative research methods. The course will focus on interviewing and participant observation, the two main "fieldwork" methods. Together, the class will select a topic and design a project that will allow students to practice these methods and gain practical experience in qualitative research and writing. Students will be taught how to engage in participant observation, conduct in-depth interviews, analyze data, and write qualitative research reports.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

SOC 1115 - GLOBAL CHANGE AND MODERN LIFE

Minimum Credits: 3
Maximum Credits: 3
This course is directed at discussion of the processes involved in the making of the modern world into a single sociocultural system. It combines matters usually discussed in courses on modernization, the comparative analysis of whole societies, international relations, and the relationship between individual and societies into a cohesive whole. More specifically it combines the analysis of relations "between" societies with the analysis of changes "within" societies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1119 - GLOBAL PERSPEVTIVES ON POPULAR CULTURE

Minimum Credits: 3
Maximum Credits: 3
In this course we will use sociological perspectives to examine the role of popular culture in everyday life, with special emphasis on the global influence of the mass media industry, the relationship between cultural consumption and culture identity, and the social significance of cultural globalization in the 21st century. Specific topics include the rise of Pokmon, franchising Sesame Street, localizing American and Japanese television drama, blurring boundaries between news and entertainment and other.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1277 - PITTSBURGH AREA STUDY

Minimum Credits: 3
Maximum Credits: 3
This seminar affords participants the opportunity to devise, implement, analyze and write up an actual research project, drawing on data from the Pittsburgh area. The substantive topic varies from year to year; whatever the topical focus, considerable attention is paid to the practical aspects of
conducting research.

**SOC 1286 - RACE AND THE CITY**

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** LG/SNC Elective Basis

SOC 1317 - SOCIOLOGY OF LITERATURE

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** LG/SNC Elective Basis

SOC 1319 - IMMIGRATION

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** LG/SNC Elective Basis

SOC 1324 - SOCIAL PROBLEMS AND MORAL CRUSADES

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** LG/SNC Elective Basis

SOC 1325 - TWO CENTURIES OF DEMOCRATIZATION

- **Minimum Credits:** 3
- **Maximum Credits:** 3
- **Academic Career:** Undergraduate
- **Course Component:** Lecture
- **Grade Component:** LG/SNC Elective Basis

SOC 1333 - COMPARATIVE PERSPECTIVES ON WOMEN
Minimum Credits: 3  
Maximum Credits: 3  
This course offers a cross-cultural perspective on the position of women in the world today. It focuses on cross-national comparisons, drawing on recent research on the lives and status of women in different regions of the world, and under different political and economic systems.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 1351 - SEMINAR LATIN AMERICAN SOCIETIES**

Minimum Credits: 3  
Maximum Credits: 3  
An advanced study of some specific institutions that are considered fundamentals in the fabric of Latin American societies such as the church, the military and the family. The relationship between these institutions and the process of development is discussed. Recent changes in these institutions are examined.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis

**SOC 1359 - CONTEMPORARY ARAB SOCIETY**

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

**SOC 1360 - PEACE MOVEMENTS AND PEACE EDUCATION**

Minimum Credits: 3  
Maximum Credits: 3  
This course focuses on two major components in the field of peace studies; peace movements and peace education. Key concepts (e.g. peace, war, violence, conflict, justice, equality, democracy, and citizenship) and theories are discussed. Movements for (inter-personal, inter-group, and international) peace initiated by people in the United States and other countries historically and today will be analyzed. School-, university-, and community-based peace education programs developed in various countries will also be examined.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 1362 - REVOLUTIONARY SOCIAL MOVEMENTS**

Minimum Credits: 3  
Maximum Credits: 3  
A broad survey of social revolutionary movements of the past, such as those leading to the French and Russian revolutions, and their influence on various movements taking place in third world countries of today. Emphasis will be placed on movements presently underway in Latin America.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SOC 1364 - RACE AROUND THE WORLD**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate
SOC 1365 - RACE, CLASS, AND GENDER

Minimum Credits: 3
Maximum Credits: 3
This comparative course draws together a multidisciplinary set of readings to examine the intersection of race, gender and social and economic development in Latin America and the USA. Readings include theories of inequality and case studies.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1370 - GENDER AND HEALTH WORLDWIDE

Minimum Credits: 3
Maximum Credits: 3
Gender and health worldwide is a mixed-level Undergraduate course focused on gender disparities in health around the world. Through lectures, in-class exercises, films, and course projects, students will explore the threats to women's health in different parts of the world. The course also considers how gender inequalities more broadly affect women's health outcomes and how movements and policymakers seek to address gender gaps in health.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1386 - FRENCH REVOLUTION

Minimum Credits: 3
Maximum Credits: 3
This course will consider various theories of the social sources of revolutions and evaluate them in the light of historical research.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1405 - RELIGION AND SEXUALITY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1413 - MARRIAGE

Minimum Credits: 3
Maximum Credits: 3
This course considers husband-wife relations and problems of sex, economic roles, leisure activity, and conflict resolution; family planning, childrearing, and family life and finances are examined; and finally the processes of growth or deterioration among couples are analyzed, including the possibilities of divorce and remarriage.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
SOC 1414 - SPECIAL TOPICS

Minimum Credits: 1
Maximum Credits: 3
Current topics of particular sociological interest. Topics covered vary with instructor and term.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

SOC 1415 - RELIGIOUS DIVERSITY

Minimum Credits: 3
Maximum Credits: 3
What is the best way to accommodate religious and cultural diversity within a nation-state and in civil society? How should individual rights to practice religion be balanced with communal needs? Should freedom from religion be protected as much or more than freedom of religion? These are pressing contemporary issues in many countries, including the United States, but issues of religious diversity and questions of how, and even whether--to tolerate religious minorities have a long history. In this course, we will examine the toleration of minority religions in particular historical settings, and the issues and problems (both doctrinal and social/political) that societies grappled with as they confronted diverse religious landscapes. We will also use these historical precedents as a lens to examine contemporary examples of religious pluralism, diversity, and conflict. Case studies will mainly be drawn from pre-modern Europe and modern Europe and North America, but we will also look at Mughal and modern India and discuss religion in pre-modern China.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1416 - SEX GENDER SEXUALITY AND THE BRAIN SCIENCES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

SOC 1420 - MIGRATION IN AMERICAN RELIGION

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1437 - COMMUNITY/TOURISM ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
An introductory course on application of sociological, ecological, and sustainability principles to the analysis of communities engaged in tourism, in terms of their social, economic, political, ecological, and selected contemporary community problems, and an attempt to relate sociology to tourism development. In particular, we aim to comparatively assess a range of tourism development modalities - e.g. ecotourism, sport, cultural, classical, health-botanical tourism, etc. in view of quality of life indicators.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
SOC 1440 - EXPERIENCING GLOBALIZATION

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

SOC 1445 - SOCIETY AND ENVIRONMENT

Minimum Credits: 3  
Maximum Credits: 3  
The state of the environment reaches the pages of our newspapers every day. How did we get to this state? Throughout history, human societies have made use of the environment as all human activity is dependent on through puts of energy and materials. The course will seek to understand the social, economic, and political processes as they lead to impacts on the environment. Far from being 'out there', the state of the environment is integrally related to the ways societies work.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

SOC 1446 - CONSUMPTION & EVERYDAY LIFE

Minimum Credits: 3  
Maximum Credits: 3  
We buy things almost every single day of our lives. Drawing on theories and examples within everyday life, students will be exposed to both historical and contemporary approaches to consumption: 1) 'History': we survey theories about the rise of the 'new' bourgeois consumer; globalization and Medonladization; the rise of advertising and branding; and the beginnings of retail psychology. 2) 'Theory': we look to Barthes, de Certeau, Bourdieu, Zizek and others to consider associations between consumption, identity, and meaning-making; appropriation; the rise of ethical consumption; gender and domestic consumption; the commodification of the body and senses.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

SOC 1448 - WORKING WOMEN

Minimum Credits: 3  
Maximum Credits: 3  
This course studies traditional patterns of women employment, recent gains and changes, and prospects for the future. One aim of the course is for students to gain an understanding of their own work experiences and career plans, as well as those of various groups of women, in relation to broad social and economic changes that are reshaping work in industrial societies.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

SOC 1450 - HEALTH AND ILLNESS

Minimum Credits: 3  
Maximum Credits: 3  
This upper-level course examines selected issues of health, illness and medical care. It examines the ways in which medicine and public health have displaced both religion and the law as the dominant forms of social control in the late 20th century and the social transformation of the medical profession over the past fifty years.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis
SOC 1467 - TOPICS MENTAL HEALTH AND ILLNESS

Minimum Credits: 3
Maximum Credits: 3
This course challenges some basic assumptions, practices and categories used in the mental health field and widely accepted in contemporary American culture. It introduces the student to the constructionist perspective on deviance and explores its implications for understanding and studying mental health/illness. It also focuses on the relationships between the professional domains of psychotherapy, medicine, religion and the law.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1476 - URBAN POLICY AND PLANNING

Minimum Credits: 3
Maximum Credits: 3
This course will provide a brief review of migration and urban growth during the last several decades. The process or urban policy formulation and implementation will be studied. An attempt will be made throughout the course to show the relationships between economic and social conditions and the way they define the parameters of urban policy.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1486 - WAR & MILITARY IN UNITED STATES

Minimum Credits: 3
Maximum Credits: 3
A lecture-discussion course on the roles military systems play in international & national affairs, as well as in the social and economic life of the U.S. the effects that wars and military service have on the individual, the family, the economy, and politics are also addressed. This is not a course on battles, tactics, logistics, strategy, and command. It is concerned with recruitment & social origins of military personnel; training and value inculcation; combat behavior and morale; war crimes and the laws of war; civil military relations; veterans; & inter-service rivalry.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1488 - HISTORY MEDICINE AND HEALTH CARE

Minimum Credits: 3
Maximum Credits: 3
Provides an overview of the social history of medicine from prehistory to the present. Focuses on the emergence of medical institutions, education, theories, practices and the orthodox and irregular medical sects. Describes the growth of the separate disciplines of nursing, pharmacy and public health. Examines the impact of socioeconomic factors, religions and war on the evolution of medical science. Discusses the changing roles of government in the development of the American health care system.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1500 - CAPSTONE RESEARCH PRACTICUM FOR MAJORS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SOC 0150 and 0230

SOC 1515 - SPECIAL TOPICS STUDY ABROAD

Minimum Credits: 3
Maximum Credits: 3
Current topics of particular sociological interest, topics will be covered from various universities through the study abroad program.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1771 - KINSHIP AND THE FAMILY

Minimum Credits: 3
Maximum Credits: 3
In this course Western and nonwestern forms of kinship, family, and marriage will be discussed and analyzed. Special attention will be given to the history of European marriage, to family organization and industrialization, and to women's relation to kinship and family order. The differences in European and non-European reactions to industrialization will be compared in some detail. Europe, China, India, and Japan will receive special attention.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1799 - HIMALAYAN POLITICAL ECOLOGY

Minimum Credits: 3
Maximum Credits: 3
The Himalayan region is characterized by dramatic climatic and geological variation, a tremendous range of biodiversity and a complex ecology. Within the region there is also profound cultural variation. This course seeks to provide a critical perspective on the ecology and environment of the Himalayas by examining how different groups at the village, state, national and international level are implicated in the political ecology of the mountains. We will look at the way in which village farming communities use natural resources, what kind of pressure is put on resources as a result of development and population growth, how the mountain environment shapes the politics and resource distribution at the level of the state and, finally, how environmental and energy issues shape national policy and international relations.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SOC 1900 - INTERNSHIP

Minimum Credits: 1
Maximum Credits: 6
A sub-category of independent study, in which the student is in some sense employed (usually as a volunteer but sometimes for pay) in a non-academic position, typically under the direct supervision of someone other than an F.A.S. faculty member, in which the experience gained by the student is directly related to an academic discipline, and which the student's learning is evaluated and graded by a faculty member.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

SOC 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
The student undertakes, under specific conditions, an independent program of study, research, or creative activity usually off-campus and with less
immediate and frequent guidance from the sponsoring faculty member than is typically provided in directed reading and directed research courses.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

### SOC 1902 - DIRECTED READING

**Minimum Credits:** 1  
**Maximum Credits:** 6  
The student undertakes a specified course of study, comparable in character to a regular course, under the direct supervision of a faculty member.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

### SOC 1903 - DIRECTED RESEARCH

**Minimum Credits:** 1  
**Maximum Credits:** 6  
The student undertakes a defined task of research on campus under the supervision of a faculty member of an appropriate department, and in which the fruits of the research are embodied in a thesis, extended paper, laboratory report, or other appropriate form.

**Academic Career:** Undergraduate  
**Course Component:** Directed Studies  
**Grade Component:** LG/SNC Elective Basis

### SPAN 0001 - ELEMENTARY SPANISH 1

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is designed to develop the student's communicative proficiency through an integrated approach to the teaching of all four language skills: listening, speaking, reading and writing. Grammatical structures; vocabulary and readings are presented as tools for developing good communication skills. The course also aims to foster cultural awareness of the Spanish-speaking world.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### SPAN 0002 - ELEMENTARY SPANISH 2

**Minimum Credits:** 5  
**Maximum Credits:** 5  
A continuation of Spanish 0001, the course builds on the skills acquired in the first term as students continue to develop their communicative language skills in Spanish.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### SPAN 0003 - INTERMEDIATE SPANISH 3

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course builds on the skills acquired during the elementary sequence (either Spanish 0001 and 0002 or Spanish 0015). It includes a functional review of the basic language structures and introduces even more complex structures. The course has a strong cultural component.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
SPAN 0004 - INTERMEDIATE SPANISH 4

Minimum Credits: 3  
Maximum Credits: 3  
A continuation of Spanish 0003. Students continue to refine their language abilities and enhance their communicative competence. The course has a strong cultural component.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: SPAN 0003 (MIN GRADE 'C') or Spanish Placement Test Score equal/greater 4

SPAN 0007 - ELEMENTARY SPANISH FOR READING

Minimum Credits: 3  
Maximum Credits: 3  
This is an introductory, independent course, primarily for graduate students who need to quickly acquire the basic vocabulary and grammar of written Spanish. Tapes are available for those who wish to practice the oral skills. Students begin to read increasingly more demanding passages.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

SPAN 0015 - INTENSIVE ELEMENTARY SPANISH

Minimum Credits: 5  
Maximum Credits: 5  
This is a condensed version of the first two courses of the Spanish language program (Spanish 0001 and 0002), and it has been designed for students who have taken at least two years of high school Spanish or its equivalent. Spanish 0015 follows a communicative approach: from the first day of class you will interact in Spanish in a meaningful context with your instructor and classmates. By the end of this course you will have a general knowledge of the grammar of the Spanish language and you will be able to communicate effectively in Spanish according to this level.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

SPAN 0020 - CONVERSATION

Minimum Credits: 3  
Maximum Credits: 3  
The goal of this fifth-semester course is to enhance fluency and the development of oral proficiency in Spanish. Although the emphasis is on speaking and listening skills, reading and writing assignments are an important part of the syllabus. This course helps students to improve their fluency, pronunciation, and strategic competence such as paraphrasing skills, and increases their vocabulary through readings, films, digital recordings and other authentic materials.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: SPAN 0004 (MIN GRADE 'B+') or Spanish Placement Test Score equal/greater 20

SPAN 0025 - GRAMMAR AND COMPOSITION

Minimum Credits: 3  
Maximum Credits: 3  
This course reviews Spanish grammar, and, in addition, is designed to aid the students in vocabulary building, improving their knowledge of idiomatic usage, and their ability to translate from English to Spanish.  
Academic Career: Undergraduate  
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0004 (MIN GRADE 'B+') or Spanish Placement Test Score equal/greater 20

SPAN 0050 - SPANISH CIVILIZATION

Minimum Credits: 3
Maximum Credits: 3
Span 0050 offers a comprehensive survey of Spanish history and civilization from the early prehistory period to the present. Readings and lectures are in Spanish.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: [PREQ: SPAN 0020 and 0025 (MIN GRADE 'C' for Listed Courses); PLAN: Spanish (BA or BPH)] or [CREQ: SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses); PLAN: Spanish (MN)]

SPAN 0055 - INTRODUCTION HISPANIC LITERATURE 1

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce students to the study of Spanish and Latin American literatures, while dealing with concepts and terms that can be applied to all literature.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: CREQ: SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses)

SPAN 0082 - LATIN AMERICA TODAY

Minimum Credits: 3
Maximum Credits: 3
This course is an overview of contemporary Latin America and its people and is designed to be an introduction for students who have no previous knowledge of the area. Students will be exposed to several aspects of Latin America. A special attempt will be made to show contemporary social reality as interpreted by some of the region's most gifted writers. In English.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SPAN 0101 - ELEMENTARY SPANISH 1

Minimum Credits: 3
Maximum Credits: 3
This course is designed to develop the student's communicative proficiency through an integrated approach to the teaching of all four language skills: listening, speaking, reading and writing. Grammatical structures; vocabulary and readings are presented as tools for developing good communication skills. The course also aims to foster cultural awareness of the Spanish-speaking world.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SPAN 0102 - ELEMENTARY SPANISH 2

Minimum Credits: 3
Maximum Credits: 3
A continuation of Elementary Spanish 1, training in spoken and written Spanish.
Academic Career: Undergraduate
SPAN 1031 - ELEMENTARY SPANISH 1 FOR MBAS

Minimum Credits: 2
Maximum Credits: 2
This is an introductory conversational course specifically designed for business students who do not know Spanish. The student will be presented with the basic structures of the language, as well as the necessary vocabulary to be able to understand simple Spanish and converse on everyday ("survival skills") topics. The course, conducted in Spanish, will be relatively fast-paced, and will require students to participate actively in a variety of exercises, group activities, and exchange of information.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SPAN 1032 - ELEMENTARY SPANISH 2 FOR MBAS

Minimum Credits: 2
Maximum Credits: 2
Spanish 0032, designed specifically for business majors, is a continuation of 0031 at the elementary level. Emphasis is on improving listening and speaking skills, with considerable in-class conversational practice. New grammatical structures and increased vocabulary are introduced. Limited business language will be included, along with selected cultural information.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SPAN 1250 - HISPANIC CIVILIZATIONS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0020 or 0025 (Min Grade 'C'); PLAN: SPAN BA or BPH or MN

SPAN 1255 - INTRODUCTION TO HISPANIC LITERARY AND CULTURAL CRITICISM

Minimum Credits: 3
Maximum Credits: 3
Introduction to hispanic literary and cultural criticism
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SPAN 1260 - OVERVIEW OF SPANISH LITERATURE

Minimum Credits: 3
Maximum Credits: 3
Overview of Spanish literature
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0055 (Min Grade 'C')
SPAN 1280 - OVERVIEW OF LATIN AMERICAN LIT

Minimum Credits: 3  
Maximum Credits: 3  
Overview of Latin American literature  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: SPAN 0055 (Min Grade 'C')

SPAN 1300 - SPANISH PHONETICS AND PHONEMICS

Minimum Credits: 3  
Maximum Credits: 3  
This course is an introduction to the study and practice of the sounds of Spanish. The overall objective of this course is to understand the sound system of Spanish as compared to English. Successful students will develop good auditory perception of Spanish and awareness of their own pronunciation, which could help to improve it.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: [SPAN 0020 and 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (BA, BPH)] or [SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (MN)]

SPAN 1302 - ADVANCED COMPOSITION AND STYLISTICS

Minimum Credits: 3  
Maximum Credits: 3  
This writing course builds upon the student's knowledge of Spanish grammar and composition. In particular attention will be given to the many syntactical and lexical usages that the foreign language learner needs to incorporate in advanced writing. The teacher will help the student improve and polish his/her individual style, with some imitation of literary models.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: [SPAN 0020 and 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (BA, BPH)] or [SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (MN)]

SPAN 1303 - SEMINAR IN LANGUAGE AND CULTURE

Minimum Credits: 3  
Maximum Credits: 3  
This course will deal in depth with various cultural and linguistic topics.  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: (SPAN 1400 or 1600) and SPAN 0050 (MIN GRADE 'C' for Listed Courses); PLAN: Spanish (BA); LVL: Sr

SPAN 1304 - METHODS OF TEACHING SPANISH

Minimum Credits: 3  
Maximum Credits: 3  
A course designed for those who plan to teach Spanish. Main focus is on practical information of how best (method and technique) to teach the language. Topics include: theory of learning, approaches, activities, dialogs and drills, the role of grammar, the lab, testing, vocabulary, and the like. Practice teaching, including videotaping.  
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [SPAN 0020 and 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (BA, BPH)] or [SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (MN)]

SPAN 1305 - SPANISH APPLIED LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
A thorough analysis of the linguistic problems in teaching Spanish to speakers of English. Particular emphasis on problems of interference by transfer from the native to the target language, using contrastive analysis as a method of problem solving. Study of phonology and grammar, with attention also to certain techniques in foreign language teaching. Included is a brief survey of the teaching of Spanish in the United States and elsewhere.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses)

SPAN 1306 - SPECIAL TOPICS IN APPLIED LINGUISTICS

Minimum Credits: 3
Maximum Credits: 3
The goal of this course is to further develop the oral proficiency of students through authentic materials including but not limited to interviews, movies, music, newspaper articles and role-playing. Emphasis on fluency and speaking skills, although reading and writing skills will not be ignored. We will review certain grammar points but communicative competence is not measured by grammatical competence alone. Pronunciation, comprehension skills, strategic competence such as paraphrasing skills, and an extensive active vocabulary are all equally important when it comes to becoming proficient in a foreign language. Students will often work in groups and pairs so it is imperative that they be willing to interact with one another and be tolerant of one another's opinions. The instructor will rate students' oral proficiency at the beginning and end of the semester based on the ACTFL speaking proficiency guidelines. These guidelines are used nation-wide as an assessment tool to identify an individual's level of speaking competence in a foreign language.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0020 and 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (BA, BPH)] or [SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (MN)]

SPAN 1310 - LINGUISTIC SEMINAR

Minimum Credits: 3
Maximum Credits: 3
This course allows students to work on various linguistic topics in depth; these may be theoretical or applied in nature. Students are expected to do original research and to present it both orally in class and as a written research document. Taught in Spanish.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [SPAN 0020 and 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (BA, BPH)] or [SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (MN)]

SPAN 1315 - BUSINESS SPANISH

Minimum Credits: 3
Maximum Credits: 3
This course offers students a linguistic and cultural background enabling them to conduct basic commercial transactions in the Spanish-speaking world.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses)

SPAN 1321 - BUSINESS SPANISH 1

Minimum Credits: 3
Maximum Credits: 3
This course is designed to acquaint students with the essential forms and documents utilized in the Spanish business world.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (BA, BPH) or [SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses) PLAN: Spanish (MN)]

SPAN 1323 - MEDICAL SPANISH

Minimum Credits: 3
Maximum Credits: 3
This course is intended for translators in training who desire experience in translating the types of medical documents professional translators handle "on-the-job". Course emphasizes acquisition of practical translation skills, and introduces basic medical principles and terminology, as they are used in medical texts.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0020 or 0025 (MIN GRADE 'C' for Listed Courses)

SPAN 1400 - SURVEY LATIN AMERICAN LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course surveys the development of Latin American literature from the Cronistas to the present. Taught in Spanish.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0050 or 1250 or 1260 or 1280 or 1400 or 1600; (MIN GRADE 'C' for all listed courses)

SPAN 1403 - LATIN AMERICAN NARRATIVE

Minimum Credits: 3
Maximum Credits: 3
This course deals with the development of Latin American prose narrative as it moves from 19th century realism and naturalism in the direction of modernista and vanguardista innovations, culminating in the narrative of the boom and the post-boom. Taught in Spanish.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: (SPAN 0050 or 1250); PLAN: Spanish (BA, BPH, MN); (MIN GRADE 'C' for all courses listed)

SPAN 1404 - LATIN AMERICAN TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course deals with literary, linguistic or cultural topics, or a combination of these. Its primary emphasis is on developing an understanding of contemporary cultures in Latin America. Taught in Spanish.
SPAN 1405 - SEMINAR: LATIN AMERICAN LITERATURE AND CULTURE

Minimum Credits: 3
Maximum Credits: 3
This course studies various cultural and literary topics according to the needs and interests of the students. Its purpose is to allow students to do original research on their own on topics of interest in the field of Latin American literature and culture. Taught in Spanish.

SPAN 1406 - U.S. LATINO LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course will focus on U.S. Latino literature. While Mexican-Americans have roots in North America that go back to colonial times, the Latino explosion has happened mainly in the last thirty years, giving rise to new processes and forms of cultural expression, including an emerging literature that is neither a subset of U.S. Literature nor an extension of modern Latin American literature, though it has connections to both. To get an idea of what this literature involves and where it is going, we will look at some representative novels, poetry, memoirs, plays and films.

SPAN 1407 - U.S. LATINO FILM

Minimum Credits: 3
Maximum Credits: 3
The major purpose of the course consists of illustrating and analyzing the role of the audiovisual media film (fiction and documentary) and video (and television, to a certain degree) for an understanding of the socio-cultural and conceptual status that Latina/o identities have acquired in today's society. Thematically, the course will focus on themes of modernity vs. tradition in U.S. Latino culture. The course uses a selection of audiovisual materials which is fairly innovative in its variety. Chicano films and videos will constitute the major part of the material.

SPAN 1414 - THEATRE AND PERFORMANCE IN LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
This course examines the use of performance by the State, by oppositional groups, and by theatre and performance practitioners, to solidify or challenge structures of power. It looks at specific example of how theatre and public spectacles have been used since the 1960s to control or contest the political stage.

SPAN 1423 - SEXUAL DIVERSITY IN LATIN AMERICAN LITERATURE AND CULTURE
Minimum Credits: 3
Maximum Credits: 3
This course covers ways in which sexuality is constructed in Latin American cultural texts (novels, short fiction, poetry, printed media, theater, film and popular culture) from the late nineteenth to early twenty-first century.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SPAN 1463 - BORGES SHORT STORIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SPAN 1470 - THE INCAS: ANDEAN INDIGENOUS PEOPLES AND SPANISH COLONIAL RULE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

SPAN 1600 - SURVEY OF SPANISH LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course surveys the development of Spanish literature from the twelfth century to the present. Taught in Spanish.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: SPAN 0055 (MIN GRADE 'C'); PLAN: Spanish (BA,BPH) or PREQ: SPAN 0050 (MIN GRADE 'C'); PLAN: Spanish (MN)

SPAN 1601 - PENINSULAR LITERATURE

Minimum Credits: 3
Maximum Credits: 3
This course studies the various stages of development of peninsular culture and literature in the 20th century, ranging from the 40-year period of the Franco dictatorship to the relatively recent transition to democracy. Taught in Spanish.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: [(SPAN 1400 or 1600) and 0050 (MIN GRADE 'C' for Listed Courses); PLAN: Spanish (BA, BPH)] or [SPAN 0050 (MIN GRADE 'C') and PLAN: Spanish (MN) ]

SPAN 1602 - IBERIAN REGIONAL IDENTITIES

Minimum Credits: 3
Maximum Credits: 3
No other courses deal with Iberia from a transnational or regional standpoint. It is becoming increasingly relevant, particularly in the European context, to articulate the study of culture in relationship to new forms of political and communitarian identitities, thus moving away from the traditional focus on the nation-state. The present course will examine the cultural, political, and economic role of the regions within the Iberian
peninsula in shaping the European and trans-Atlantic components of both Spanish and Portuguese history.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (SPAN 0050 or 1250); PLAN: Spanish (BA, BPH, MN); (MIN GRADE 'C' for all courses listed)

**SPAN 1603 - PENINSULAR TOPICS**

- Minimum Credits: 3  
- Maximum Credits: 3  
This course looks at various cultural and literary topics according to the needs and interests of the students. Its major purpose is to allow students to do research on topics of interest in the field of peninsular literature and culture. Taught in Spanish.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (SPAN 0050 or 1250); PLAN: Spanish (BA, BPH, MN); (MIN GRADE 'C' for all courses listed)

**SPAN 1705 - SEMINAR: HISPANIC LITERATURE AND CULTURE**

- Minimum Credits: 3  
- Maximum Credits: 3  
This course studies various cultural and literary topics according to the needs and interests of the students. Its purpose is to allow students to do research on topics of interest in the field of Hispanic literature and culture. Taught in Spanish.  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (SPAN 0050 or 1250); PLAN: Spanish (BA, BPH, MN); (MIN GRADE 'C' for all courses listed)

**SPAN 1707 - AFRCN PRESEN LAT AMERN LIT/CULT**

- Minimum Credits: 3  
- Maximum Credits: 3  
This course is a chronological and topical introduction to afro-Latin American culture, making use of literary texts, historical documents, feature films, etc. It aims at providing students with a concrete frame of reference for the African presence in Latin America.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (SPAN 0050 or 1250); PLAN: Spanish (BA, BPH, MN); (MIN GRADE 'C' for all courses listed)

**SPAN 1801 - DON QUIJOTE AND THE NOVEL**

- Minimum Credits: 3  
- Maximum Credits: 3  
This course deals in depth with Cervantes' Don Quijote as the first modern novel and its profound influence on European literatures. Taught in English.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (SPAN 0050 or 1250); PLAN: Spanish (BA, BPH, MN); (MIN GRADE 'C' for all courses listed)

**SPAN 1805 - CONTEMPORARY HISPANIC LITERATURE AND SOCIETY**

- Minimum Credits: 3  
- Maximum Credits: 3
This course deals with contemporary Spanish and Latin American societies as revealed in short stories, novels and poetry in an effort to ascertain the cultural values and concepts of these societies. Taught in English.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SPAN 1806 - CAPSTONE SEMINAR**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: (SPAN 1260 or 1280 or 1400 or 1600 or 0050 or 1250 (MIN GRADE 'C' for listed courses); PLAN: Spanish (BA, BPH, MN); LVL: Senior

**SPAN 1807 - HISPANIC SPECIAL TOPICS**

Minimum Credits: 3  
Maximum Credits: 3  
This course deals in depth with such topics as mass media, sexual roles, social structures and political institutions in Hispanic society as revealed in various literary works, films, documents and other sources. Taught in English.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**SPAN 1890 - THE NEW NOVEL IN LATIN AMERICA**

Minimum Credits: 3  
Maximum Credits: 3  
Lectures, textual analysis and class discussions in English on the major novelists of the Latin American "boom" of the sixties, with reference to techniques of literary analysis and the social, ideological and cultural background of the works in question.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: (SPAN 0050 or 1250); PLAN: Spanish (BA, BPH, MN); (MIN GRADE 'C' for all courses listed)

**SPAN 1901 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 6  
This course allows students to work in-depth in areas of their choice; evaluation is by examination or by the production of a term paper.  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**SPAN 1902 - DIRECTED STUDY**

Minimum Credits: 1  
Maximum Credits: 6  
This course allows students to work in depth in areas of their choice, with the approval and supervision of a faculty member, who meets regularly with the student.  
**Academic Career:** Undergraduate
SPAN 1906 - SPANISH INTERNSHIP FOR CREDIT

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit

STAT 0200 - BASIC APPLIED STATISTICS

Minimum Credits: 4
Maximum Credits: 4
This course teaches methods of descriptive and inferential statistics. Topics include data collection and description, hypothesis testing, correlation and regression the analysis of variance, and contingency tables. Students will learn how to use a statistical computer package.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

STAT 0800 - STATISTICS IN THE MODERN WORLD

Minimum Credits: 3
Maximum Credits: 3
The course introduces statistical reasoning to a diverse audience. The main goal is the understanding of some basic statistical principles so that the student can understand research reports involving statistics and applications of statistics reported in the media. Statistical reasoning will be taught through the use of examples. An important part of the course will be a nontechnical discussion of controlled and randomized experiments. The subject matter will emphasize examples from the health and social sciences.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

STAT 1000 - APPLIED STATISTICAL METHODS

Minimum Credits: 4
Maximum Credits: 4
This course is an intensive introduction to statistical methods. It is designed for students who want to do data analysis and to study further ideas in applied statistics beyond this course. The topics covered include descriptive statistics, elementary probability, random sampling, controlled experiments, hypothesis testing, regression and the analysis of variance. Emphasis will be placed on the statistical reasoning underlying the methods. Students will also become proficient at the use of a statistical software package.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

STAT 1100 - STATISTICS AND PROBABILITY FOR BUSINESS MANAGEMENT

Minimum Credits: 4
Maximum Credits: 4
This is a one-term introduction to statistics and probability. Both modeling and data analysis will be emphasized. Various probability models for discrete and continuous variables will be analyzed. Inferential, descriptive and data analysis techniques will be covered with examples from management. A statistical package will be introduced and used to conduct data analyses.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0120 or 0126 or 0220

STAT 1151 - INTRODUCTION TO PROBABILITY

Minimum Credits: 3
Maximum Credits: 3
This course presents at both a theoretical and applied level the basic probability concepts required for statistical inference. Topics include set theory and basic probability, independence and Bayes' theorem, discrete random variables and their distributions--Bernoulli, Binomial, Poisson, and geometric, continuous random variables and their distributions--uniform, exponential, gamma, beta, and normal, transformation of random variables, moment and moment generating functions, multivariate discrete distribution, marginal and conditional distribution and independent variables.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: MATH 0230 or 0235 or 0240 or 0245

STAT 1152 - INTRODUCTION TO MATHEMATICAL STATISTICS

Minimum Credits: 3
Maximum Credits: 3
This course introduces the elementary concepts of statistical inference. Topics include functions of random variable, sampling distributions, decision criterion, estimation, hypothesis testing, regression, analysis of variance, and non-parametric methods.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 1151

STAT 1201 - APPLIED NONPARAMETRIC STATISTICS

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course will be to prepare students to use standard nonparametric tests for problems that frequently occur in applications. The Wilcoxon, Fisher (sign), Ansari-Bradley, Miller (jackknife), Kruskal-Wallis, Kendall, and Kolmogorov-Smirnov tests will be discussed. Minitab subroutines will be used to facilitate computation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 0200 or 1000 or 1100 or 1152; MIN GRADE: STAT 0200 B-

STAT 1211 - APPLIED CATEGORICAL DATA ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to provide contingency table techniques for research workers in the social sciences, medical sciences and other areas where it is necessary to investigate relationships between areas where it is necessary to investigate relationships between qualitative variables. The course deals with the chi-square test and standard 2x2 and RXC contingency tables, as well as log linear and other special types of contingency tables analysis.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 0200 or 1000 or 1100 or 1152; MIN GRADE: STAT 0200 B-

STAT 1221 - APPLIED REGRESSION
Minimum Credits: 3  
Maximum Credits: 3  
This course covers simple linear regression (one variable) and one way analysis of variance followed by more complicated regression models. More complex ANOVA models are treated if time permits. Some computer applications will usually be considered.  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: STAT 0200 or 1000 or 1100 or 1152; MIN GRADE: B-
STAT 1261 - PRINCIPLES OF DATA SCIENCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

STAT 1291 - TOPICS APPLIED STATISTICS I

Minimum Credits: 3
Maximum Credits: 3
Various topics concerning the applications of statistics will be taught on an irregular basis depending on faculty interests and students' needs. Example of possible topics include re-sampling techniques in statistics; statistical graphics; cluster analysis; and classification methods.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

STAT 1301 - STATISTICAL PACKAGES

Minimum Credits: 3
Maximum Credits: 3
This course will cover a variety of topics concerning computing and statistics. Basic statistical analysis packages such as BMPD, SPSS, Minitab, and IMSL will be discussed and compared. Other computational issues that will be discussed include simulation, graphics, elementary database management, and certain stand-alone statistical programs.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 1221

STAT 1311 - APPLIED MULTIVARIATE ANALYSIS

Minimum Credits: 3
Maximum Credits: 3
We start with the basic concepts of regression and correlation. After developing the necessary linear algebra, we will study the multivariate normal and then go on to do one or more of the following: cluster analysis, discriminant analysis, directional data, and factor analysis. We will make use of the Minitab and BMDP computer packages.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 1221

STAT 1321 - APPLIED TIME SERIES

Minimum Credits: 3
Maximum Credits: 3
The objective of the course is to present at the elementary level, a unified and reasonably complete exposition of statistical methods used in time series analysis. Serious consideration is given to both time and frequency domain approaches. Real data from a number of subject fields will be analyzed as they occur in the exposition.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 1151 and (STAT 1221 or ECON 1150)
STAT 1361 - STATISTICAL LEARNING AND DATA SCIENCE

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

STAT 1631 - INTERMEDIATE PROBABILITY

Minimum Credits: 3
Maximum Credits: 3
This course is the first half of a two term sequence in mathematical statistics intended for undergraduate students and graduate applied statistics majors. Topics to be covered include probability concepts, random variable, discrete and continuous variables, joint distributions, functions of random variables, and some sampling distributions.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 1151 and MATH 0240

STAT 1632 - INTERMEDIATE MATHEMATICAL STATISTICAL

Minimum Credits: 3
Maximum Credits: 3
This course is the second half of a two term course. Topics to be covered include estimation, inference, linear models, and an introduction to Bayesian estimation.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 1631 and MATH 0240

STAT 1731 - STOCHASTIC PROCESSES

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to stochastic processes and its applications. The major topics are Markov chains, Poisson processes, Brownian motion, and branching processes.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 1151 or 1631

STAT 1741 - APPLIED PROBABILITY THEORY

Minimum Credits: 3
Maximum Credits: 3
The course will begin with an introduction to conditional probability. Topics to be covered include the Poisson process, queueing processes, renewal processes, and reliability theory.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: STAT 1151 or 1631
STAT 1900 - INTERNSHIP

Minimum Credits: 1
Maximum Credits: 3
Under faculty supervision the student participates in a statistics project.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: H/S/U Basis

STAT 1902 - DIRECTED STUDY

Minimum Credits: 1
Maximum Credits: 9
With approval from an instructor, the student will participate in a program of directed study in statistics or probability.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

STAT 2131 - APPLIED STATISTICAL METHODS 1

Minimum Credits: 3
Maximum Credits: 3
This introductory graduate level course on applied statistics covers a wide variety of problems. We begin with simple data description and go on to standard estimation and testing problems. We then study various types of linear models. We make extensive use of the computer; the student will learn BMDP and Minitab.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC

STAT 2132 - APPLIED STATISTICAL METHODS 2

Minimum Credits: 3
Maximum Credits: 3
This course is a continuation of STAT 2131.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC
Course Requirements: PREQ: STAT 2131

STAT 2381 - SUPERVISED STATISTICAL CONSULTING

Minimum Credits: 1
Maximum Credits: 6
In this course students will consult with clients in the consulting center. The consulting will be under the supervision of experienced consultants. Students will be taught how to provide statistical methods in conjunction with real problems and how to analyze and report the results.
Academic Career: Graduate
Course Component: Lecture
Grade Component: Grad LG/SNC
Course Requirements: PREQ: STAT 2132

BUSSPP 0020 - MANAGING IN COMPLEX ENVIRONMENTS
Introduces the challenge of managing in complex environments. A team-based emphasis promotes student awareness of real-world business issues. Students acquire practical skills as well as fundamental knowledge and abilities. Emphasizes a strategic inquiry of the driving forces of competitive markets, the importance of history, the complexity of resource allocation under uncertainty, and the need to develop firm-specific capabilities that are flexible and responsive to changing situations. Considers construction of criteria for firm success that reflect legal, economic, etc. demands.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

### BUSSPP 0021 - MANAGING IN COMPLEX ENVIRONMENTS HONORS +1

- **Minimum Credits:** 1  
- **Maximum Credits:** 1  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** Letter Grade

### BUSSPP 0036 - MCE+3 INT'L FIELD PROJECT - GERMANY

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- Provides students with the opportunity to apply concepts and tools acquired in BUSSPP 0020 managing in complex environments and new concepts and tools to the study of firms in a non-U.S. environment. Students work in teams with engineering students on research projects that are linked to specific firms and industries. Business environment and practices abroad are compared to those in the U.S. The trip abroad includes company visits, lectures, and cultural excursions during a two-week study period in Germany under the guidance of a faculty member.  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** Letter Grade  
- **Course Requirements:** Restricted for College of Business Administration

### BUSSPP 0037 - MCE+3: INTERNATIONAL FIELD PROJECT - COSTA RICA

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- Provides students with the opportunity to apply concepts and tools acquired in BUSSPP 0020 managing in complex environments and new concepts and tools to the study of firms in a non-US environment. Students work in teams with engineering students on research projects that are linked to specific firms and industries. Business environment and practices abroad are compared to those in the U.S. The trip abroad includes company visits, lectures, and cultural excursions during a two-week study period in Chile under the guidance of a faculty member.  
- **Academic Career:** Undergraduate  
- **Course Component:** Lecture  
- **Grade Component:** Letter Grade  
- **Course Requirements:** Restricted for College of Business Administration

### BUSSPP 0038 - MCE+3: INTERNATIONAL FIELD PROJECT - CHINA

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  
- Provides students with the opportunity to apply concepts and tools acquired in BUSSPP 0020 managing in complex environments and new concepts and tools to the study of firms in a non-US environment. Students work in teams with engineering students on research projects that are linked to specific firms and industries. Business environments and practices abroad are compared to those in the U.S. The trip abroad includes company visits, lectures, and cultural excursions during a two-week study period in China under the guidance of a faculty member.
BUSSPP 0041 - MCE+3 INTERNATIONAL FIELD PROJECT - VIETNAM

Minimum Credits: 3
Maximum Credits: 3
Provides students with the opportunity to apply concepts and tools acquired in BUSSPP 0020 managing in complex environments and new concepts and tools to the study of firms in a non-U.S. environment. Students work in teams with engineering students on research projects that are linked to specific firms and industries. Business environment and practices abroad are compared to those in the U.S. The trip abroad includes company visits, lectures, and cultural excursions during a two-week study period in Vietnam under the guidance of a faculty member.

BUSSPP 0042 - MCE+3 INT'L FIELD PROJECT- ITALY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: Restricted for College of Business Administration

BUSSPP 0043 - MCE +3: INTERNATIONAL FIELD PROJECT - IRELAND

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSSPP 0043IS - MCE +3: INTERNATIONAL FIELD PROJECT- IRELAND - IN STATE

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSSPP 0043OS - MCE +3: INTERNATIONAL FIELD PROJECT - IRELAND - OUT OF STATE

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSSPP 0044 - PITT BUSINESS GLOBAL HONORS
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSSPP 0044IS - WOODCOCK GLOBAL HONORS FELLOWSHIP - IN STATE

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSSPP 0044OS - WOODCOCK GLOBAL HONORS FELLOWSHIP - OUT OF STATE

Minimum Credits: 0
Maximum Credits: 0
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

BUSSPP 1080 - STRATEGIC MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Focuses on corporate and divisional policy formulation and implementation. Knowledge and techniques learned in earlier courses will be applied in an integrated fashion to the process of strategic decision-making and organizational change. Among topics considered in the course will be relationships of organizations to their environments, hierarchy of organizational objectives, structured as well as informal approaches to strategic planning, integration of business functions, organizational structure, and policy implementation and evaluation. Notable devotion to firms competitive dynamics.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PROG: College of Business Admin; LVL: Jr, Sr

BUSSPP 1740 - GLOBAL STRATEGY AND COMPETITIVE ADVANTAGE

Minimum Credits: 3
Maximum Credits: 3
This course explores the opportunities and challenges of global business in the 21st century. The discussions and exercises are designed to reveal the nuanced nature of competing globally, emphasizing both the increasing openness of borders and the continuing differences between countries. The course will employ case study analysis and discussion, along with a set of readings that are drawn from both academic and practitioner sources. An individual research project that involves identifying and researching a global business topic of interest to you will be a key part of the course.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSSPP 1080 (MIN GRAD 'C'); PLAN: Global Management (BSBA)

BUSSPP 1745 - PROJECTS IN GLOBAL MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
The student will work with a real-world client and problem. Each project is different, and will provide the opportunity for a team of students to apply
various conceptual and analytic skills taught in the major and in CBA, and to report to the client the results of these analyses. Each project will have the common element of a global or cross border dimension. The client will provide a problem it deems important and a manager to work with the student team. Each team will have a faculty advisor. Most students will take this course in one of their final two terms of study.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Global Management(BSBA); LVL: Sr

**BUSSPP 1750 - COMMERCIALIZING NEW TECHNOLOGY**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course covers theory, conceptual frameworks, and tools used to formulate strategies for commercializing new technologies. The analytical frameworks cover elements of commercialization strategy that are equally critical to start-ups and to corporate technology ventures. In addition, we discuss some of the key challenges that differ for start-ups versus established firms. The primary deliverable in the course is a professional quality project which evaluates the commercialization alternatives for an emerging technology. Your project team will be paired with a local inventor, unless you prefer to evaluate a technology of special interest to your team. Experienced entrepreneurs and expects in financing new technology ventures will also address the class.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**BUSSPP 1790 - GLOBAL MANAGEMENT INTERNSHIP**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
The strategic management internship provides business credit for project assignments that augment a professional strategic management work experience.  
**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** Satisfactory/No Credit

**BUSSPP 1795 - GLOBAL MANAGEMENT INDEPENDENT STUDY**

**Minimum Credits:** 1  
**Maximum Credits:** 3  
An independent study course for students desiring to pursue in greater depth a specific set of strategic management issues or problems to which they have been introduced in other strategic management courses. The course involves directed reading and research under the guidance of a full-time faculty member.  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Letter Grade

**SA 0110 - VISUAL THINKING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This introductory course is a comprehensive survey of the fundamental principles of visual organization. The assignments are directed for learning to see, and to think and to express visually. The class projects involve uses of art materials with which to articulate line, shape, texture, color, and other design components. The intent is to broaden understanding of visual relationships in art and in the sources of art and design.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis
SA 0120 - PAINTING STUDIO 1

Minimum Credits: 3
Maximum Credits: 3
Foundation painting is an introductory course in the principle practices of painting. The course develops compositional and color awareness and basic painting techniques. This course will explore the formal and expressive aspects of painting.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SA 0130 - DRAWING STUDIO 1

Minimum Credits: 3
Maximum Credits: 3
Foundation drawing is an introductory course that instructs students in traditional drawing approaches and visual analysis through the act of drawing. Principles of perspective, composition, and methods of modeling form are explored for the development of individual skills and perception.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SA 0140 - SCULPTURE STUDIO 1

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the basic formal elements and expressing content of sculpture. This course provides experience in the observation and analysis of natural form, and provides a method for abstraction. Foundation sculpture provides the opportunity to gain experience with diverse sculpture materials and techniques, and to establish a foundation for individual artistic growth and development with a 3-D form.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SA 0180 - DIGITAL STUDIO: PHOTOGRAPHY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SA 1220 - PAINTING STUDIO 2

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 0120 and 0130

SA 1230 - DRAWING STUDIO 2

Minimum Credits: 3
Maximum Credits: 3
Drawing 1230 is the intermediate level as a continuation of Foundation Drawing 0130. It is a comprehensive investigation of the figure as well as
further development of personal involvement in drawing as an art form. Course work includes detailed anatomical studies to more complex and interpretive figurative and non-figurative compositions. Monochromatic and chromatic media are explored as approaches to the drawing discipline.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 0110 and 0130

SA 1240 - SCULPTURE STUDIO 2

Minimum Credits: 3
Maximum Credits: 3
This is an intermediate sculpture course which refines skills while challenging students to interpret assignments independently. The purpose of this course is to strengthen students' commitment to individual growth and personal discovery and to deepen their awareness of the relationships between process, material, and content in sculpture.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 0110 and 0140

SA 1260 - PRINT STUDIO: INTAGLIO

Minimum Credits: 3
Maximum Credits: 3
Intaglio printmaking is an introductory print course. Basic intaglio printmaking techniques are explored through the use of dry point, copper plate line etching, and aquatint. Advanced techniques are explored toward the end of the semester. The course is designed to explore "safe etching" techniques by avoiding or limiting the use of hazardous chemicals.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 0110 and 0130

SA 1270 - DIGITAL STUDIO: IMAGING

Minimum Credits: 3
Maximum Credits: 3
This course is a studio designed to immerse students in the creation and investigation of digital images. Emphasis will be on the history and aesthetics of lens-based (photographic) processes as they relate to art and digital technology. Throughout the course, students will gain and/or hone technical skill, but the emphasis will be on the use of the camera and computer within an art context. Thoughtfulness, experimentation and curiosity are emphasized and encouraged.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 0110 and 0180

SA 1320 - PAINTING STUDIO: PROJECTS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 1220

SA 1330 - DRAWING STUDIO: PROJECTS
Minimum Credits: 3  
Maximum Credits: 3  
Drawing 1330 is the third level drawing class for studio arts majors. The emphasis is on individual student drawing-based projects. The first half of the semester includes three projects driven by open-ended prompts. During the second half of the semester students develop an ambitious body of work that involves drawing as a broadly defined discipline. Student work may take many forms which might include, but are not limited to: drawings on paper; installation or drawing in space; mapping; digitally produced drawing; comics or other narrative series; or time-based works such as artist books.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: SA 1230

SA 1340 - SCULPTURE STUDIO: PROJECTS

Minimum Credits: 3  
Maximum Credits: 3  
Environmental art is grounded in interrelationships. These connections include not only physical and biological pathways but also cultural, political and historical aspects of any ecological system. This course focuses on the creation of metaphoric and functional artworks that reveal ecological consideration; these artistic gestures serve to enact change and as connection for the community.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: SA 1240

SA 1345 - SCULPTURE STUDIO: INSTALLATION

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced sculpture course examining site specific and installation works as strategies in contemporary art. Continually challenged by newly revised and emerging roles in the art world and society at large, the purpose of this studio course is to provide a forum for the discussion and exploration of issues playing a role in the contemporary critical debate.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: SA 1240

SA 1365 - PRINT STUDIO: SCREENPRINT

Minimum Credits: 3  
Maximum Credits: 3  
Students are introduced to a variety of screen-printing techniques and explore the process and possibility of the medium as it pertains to fine art. Students learn the use of basic equipment, printing approaches, papers, a variety of stenciling processes, and photographic and computer techniques to create marks, values, and textures. Students will also learn to make a consistent edition of prints.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade  
Course Requirements: PREQ: SA 0110 and 0120 and 0130

SA 1370 - PREPARATION AND PRACTICE IN THE VISUAL ARTS

Minimum Credits: 3  
Maximum Credits: 3  
This is an upper level course conducted in a seminar format that will inspect the wide range of career options in, and related to, the visual arts. Will assist students in preparation for professional possibilities, and will offer survival skills for maintaining their visual arts practice.
**SA 1380 - DIGITAL STUDIO: VIDEO**

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced studio designed for students to intensely experiment and explore the moving digital image in an art context. Students will explore the concepts and skills involved in working with digital video, from pre to post-production. Each student will propose and undertake a final, self-designed project during the final four weeks of the term. Major effort, time, research, imagination, productivity, and involvement are expected throughout the term.

**SA 1385 - DIGITAL STUDIO: ANIMATION**

Minimum Credits: 3  
Maximum Credits: 3  
This is an advanced course designed for students to intensely experiment and explore the moving digital image in an art context. Students will explore the concepts and skills involved in working with digital animation - from pre to post-production. Each student will propose and undertake a final, self-designed project during the final four weeks of the term. Major effort, time, imagination, productivity, and involvement are expected throughout the term.

**SA 1420 - COLOR**

Minimum Credits: 3  
Maximum Credits: 3  
This course examines color theory and perception. Various formal color systems and theories are explored. A primary objective is to clarify the relationship between perception, color as light, and color as material, such as paints. Color harmonies, light and shadow, color-form relationships, and investigation of color in human environments and as found in nature are some of the topics involved in the class projects. This course provides an opportunity to explore color interaction in a variety of media and situations.

**SA 1430 - DRAWING STUDIO: PERSPECTIVE**

Minimum Credits: 3  
Maximum Credits: 3  
Perspective drawing is an intensive investigation into various perspectival systems which provide the framework for creating the illusion of depth on a two-dimensional surface. Finished course assignments are compiled in a bound workbook which can be used as a self-made perspective reference book.

SA 1440 - SCULPTURE - FIGURE AND PORTRAIT

Minimum Credits: 3
Maximum Credits: 3
This course specializes in the study of the human form and the application of that study in portraiture. Close analysis of skeletal and muscle structure provides a basis for development of a life-size portrait modeled in clay. Modeling techniques are stressed. Interpretation of the subject is encouraged with the expectation of achieving likeness. This course also provides experience in plaster mold making and plaster casting procedures which are employed in the reproduction of the clay original.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 0130 and (SA 0110 or HAA 1913); PLAN: Studio Arts (BA) or Architectural Studies (BA)

SA 1450 - PAINTING STUDIO: FIGURE

Minimum Credits: 3
Maximum Credits: 3
The purpose of this course is to develop skills in the representation of the human form and understanding of its creative use in painting. A variety of painting media may be used in extensive observation and analysis of live models.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 0140; PLAN: Studio Arts (BA)

SA 1455 - PAINTING - LANDSCAPE

Minimum Credits: 3
Maximum Credits: 3
For students with previous painting experience, the course provides instruction in working from nature in various settings. The work focuses on selection of locations or subject, composition and techniques, representation and expression.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: SA 0120 and 0130

SA 1504 - DIRECTED STUDY: STUDIO

Minimum Credits: 3
Maximum Credits: 3
Directed study is a course for art majors to promote concentrated individual development in students who have demonstrated exceptional ability in studio courses.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

SA 1515 - THE BOOK AS ART: TEXT AND IMAGE

Minimum Credits: 3
Maximum Credits: 3
Over the course of the semester through guided exercises, collaboratively and individually, students will create content for, design, and produce an editioned artist's book.
Academic Career: Undergraduate  
Course Component: Workshop  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: Any 100-level SA course; PLAN: Studio Arts (BA or MN)

SA 1530 - DIRECTED STUDY-DRAWING

Minimum Credits: 3  
Maximum Credits: 3  
Directed study is a course for art majors to promote concentrated individual development in students who have demonstrated exceptional ability in drawing.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

SA 1540 - DIRECTED STUDY-SCULPTURE

Minimum Credits: 3  
Maximum Credits: 3  
Directed study is a course for art majors to promote concentrated individual development in students who have demonstrated exceptional ability in sculpture.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

SA 1550 - DIRECTED STUDY-PAINTING

Minimum Credits: 3  
Maximum Credits: 3  
Directed study is a course for art majors to promote concentrated individual development in students who have demonstrated exceptional ability in painting.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

SA 1560 - DIRECTED STUDY-PRINTMAKING

Minimum Credits: 3  
Maximum Credits: 3  
Directed study is a course for art majors to promote concentrated individual development in students who have demonstrated exceptional ability in printmaking.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade

SA 1570 - DIRECTED STUDY-DIGITAL

Minimum Credits: 3  
Maximum Credits: 3  
Directed study is a course for art majors to promote concentrated individual development in students who have demonstrated exceptional ability in electronic media.  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: Letter Grade
SA 1600 - SENIOR SEMINAR

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PLAN: Studio Arts; LVL: Senior

SA 1604 - SENIOR EXHIBITION

Minimum Credits: 1  
Maximum Credits: 1  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Satisfactory/No Credit  
Course Requirements: LEVEL: Senior

SA 1800 - SPECIAL TOPICS IN STUDIO ARTS

Minimum Credits: 3  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: Letter Grade

SA 1900 - INTERNSHIP

Minimum Credits: 1  
Maximum Credits: 6  
An internship is an elective which provides the opportunity for a studio arts major to obtain practical experience through on-the-job training in an art-related field. The candidate makes such arrangements for an internship under the supervision of a faculty sponsor.  
Academic Career: Undergraduate  
Course Component: Internship  
Grade Component: Satisfactory/No Credit

SA 1902 - DIRECTED RESEARCH

Minimum Credits: 1  
Maximum Credits: 3  
Academic Career: Undergraduate  
Course Component: Directed Studies  
Grade Component: LG/SNC Elective Basis

SA 1904 - UNDERGRADUATE TEACHING ASSISTANTSHIP

Minimum Credits: 1  
Maximum Credits: 3  
This course partners advanced studio arts majors with a faculty member as a teaching assistant in a current departmental course. The partnership is intended to offer further experience to dedicated students exploring a particular media with mentorship in studio management and an introduction to teaching, will enhance the course by offering enrolled students additional support and access for skill development and questions throughout the term, and will offer faculty valuable studio management and assistance in working with students.  
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

BUSSCM 1720 - OPERATIONS MANAGEMENT INTERNSHIP

Minimum Credits: 3
Maximum Credits: 3
The operations management internship provides business credits for project assignments that augment a professional business environment work experience.

Academic Career: Undergraduate
Course Component: Internship
Grade Component: Letter Grade

BUSSCM 1725 - GLOBAL SUPPLY NETWORKS AND MANUFACTURING CULTURES IN LATIN AMERICA

Minimum Credits: 3
Maximum Credits: 3
The course provides students with the fundamentals of international supply chain methods with a special focus on Latin America and Uruguay. It will feature a 2-week study visit to Uruguay where students can place their understanding of those concepts within a cultural context. The course involves significant teamwork and allows students to complete an in-depth analysis of the global supply networks and manufacturing culture in Latin America with Uruguay as a reference point.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Satisfactory/No Credit
Course Requirements: PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSSCM 1730 - MANAGING GLOBAL SUPPLY CHAINS

Minimum Credits: 3
Maximum Credits: 3
Supply chain management explores the management of the flow of materials, information, and funds through the network of suppliers, manufacturers, distributors, retailers, and customers. Using the methodologies of optimization and simulation, where applicable, this course covers topics in distribution network design, inventory management, procurement and outsourcing, revenue management, and channel coordination. For marketing majors, this course counts as a marketing elective.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSQOM 0050 and BUSQOM 1070 (MIN GRADE 'C') and STAT 1100; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management and Undeclared CBA Majors

BUSSCM 1735 - ENGINEERING AND BUSINESS COLLABORATION IN INDIA

Minimum Credits: 3
Maximum Credits: 3
The course focuses on the study of modern engineering and business principles, methods, and tools, within the context of the Indian environment. The three areas of study are: manufacturing systems, service engineering operations, and call centers. Site visits showcase challenges and opportunities available at the corporate and individual levels in this rapidly growing economy. Societal impacts of new technologies and rapid expansion of engineering industries in India are noted. Students may utilize this forum to analyze and visualize service meeting challenges and opportunities around the world.

Academic Career: Undergraduate
Course Component: Lecture
**Grade Component:** Letter Grade  
**Course Requirements:** PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

**BUSSCM 1740 - PURCHASING & SUPPLY MANAGEMENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Purchasing and supply management play an essential role in the ability of the firm to operate efficiently and be competitive in the contemporary global business environment. Included in these processes are activities involved in identifying potential suppliers, creating relationships with selected suppliers, obtaining the needed materials in the most efficient quantities at the highest quality levels, and developing strategies designed to ensure an uninterrupted flow of goods and materials. Purchasing is increasingly a strategic activity which impacts all areas of the firm, including product design, information system design, e-commerce activities, manufacturing planning and control, inventory management, human resource development, financial planning, forecasting, sales, and quality management. The objective of this course is to make students aware of the demands placed upon purchasing professionals, and to understand the impact of purchasing on the competitive success and profitability of the firm. They must also have an understanding of legal and ethical considerations which affect purchasing decision-making.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSQOM 0050 and BUSQOM 1070 (MIN GRADE ‘C’) and STAT 1100; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management and Undeclared CBA Majors

**BUSSCM 1750 - REVENUE MANAGEMENT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Increasingly, due to shortening product life cycles and capital-intensive capacity decisions, companies are being forced to place greater emphasis on managing constrained, but perishable inventory and capacity. Examples include the transportation industry (encompassing airlines, shipping, car rentals, and trucking), the hotel industry, the entertainment and sporting industry, and the retail industry. The underlying managerial issue is complex, but improved decision making can increase a company's revenues and profits. In this course, we study quantity and pricing strategies to improve profitability and the course uses microeconomics, operations research, segmentation, and pricing and forecasting concepts that the students would have learned in their economics, quantitative methods, operations, and marketing classes. The methodologies covered in the course include deterministic and stochastic optimization, forecasting, and statistical estimation. Students are also exposed to commercial revenue management software.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade  
**Course Requirements:** PREQ: BUSQOM 0050 and BUSQOM 1070 (MIN GRADE ‘C’) and (STAT 1000 or 1100); PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management and Undeclared CBA Majors

**BUSSCM 1760 - DATA MINING**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Data mining is the process of extracting useful information and knowledge from a set of data. Mining is typically done on data sets too large to be analyzed by hand, but the same techniques are applicable to small, complex data. This course is an introduction to the most popular methods used in managerial data mining, and provides experience in using commercial software to explore real data sets. Models considered include those from statistics, machine learning, and artificial intelligence, such as discriminate analysis, logistic regression, clustering, neural nets, tree/rule induction, and association rule modeling. This course is methods-oriented, as opposed to being methodology-oriented, so students learn about when and how to use techniques and how to interpret their output rather than the details about how those techniques work. A laptop computer is required.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade
Course Requirements: PREQ: STAT 1100 and BUSQOM 1080; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSSCM 1765 - FORECASTING

Minimum Credits: 3
Maximum Credits: 3
This is a short course in forecasting methodologies and their applications in business. This course covers traditional forecasting methodologies along with an overview of the state-of-the-art of forecasting with methodologies ranging from judgmental to statistical knowledge sources. Forecasting should not be confused with planning. The former is about what the future will be, while the latter deals with what the future should be. Most statistical packages (e.g. statgraphics, SPSS, SAS) have some modules to do forecasting, but the user needs to know the principles of the models to use them. Dedicated forecasting packages provide some advice to the user about the forecasting method they should use (e.g. forecastsx, forecast pro). This course focuses on forecasting methodologies using statistical knowledge. By the end of the course students should know how to collect data and analyze them with a suitable computer program, and ultimately generate forecasts by selecting and fitting an appropriate model. We will also discuss some of the managerial issues surrounding the use of forecasting models in business. The student selects an area of interest (e.g. finance, marketing, operations, accounting, general planning) within which he/she would like to apply and some of the forecasting methodologies we study, and develop a forecasting model.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: STAT 1100; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSSCM 1770 - PROCESS ENGINEERING

Minimum Credits: 3
Maximum Credits: 3
This course covers the design and engineering of the business processes the way businesses organize "work" in service as well as manufacturing operations. The interrelationships among design parameters, market/demand variability, and performance measures are studied. The principles learned here are critical in engineering and/or reengineering of the business processes.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: STAT 1100 and BUSQOM 0050; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSSCM 1775 - SIMULATION

Minimum Credits: 3
Maximum Credits: 3
The purpose of the course is to provide an introduction to the concepts, methodologies, and particularly the applications of simulation in operations management, finance, and marketing. The advantage of simulation lies in its ability to model any appropriate assumptions about a problem or system. It is the most flexible tool available for understanding the problems and for generating better and quick results. The application includes queuing, capacity planning, factory operation, corporate financial planning, bidding, and market share. We use special-purpose simulation language and spreadsheet add-in software as the principal means to illustrate simulation models and computational issues. Through considerable hands-on experience-based learning, students learn practical decision-making and problem-solving techniques by example.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: STAT 1100 and BUSQOM 0050; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSSCM 1780 - SIX SIGMA
Six Sigma is a disciplined, data-driven approach to process improvement aimed at the near-elimination of defects from every product, process, and transaction. Six Sigma utilizes the following five-phase problem-solving methodology known by the acronym DMAIC: 1. Define the projects, the goals, and the deliverables to customers (internal and external). Describe and quantify both the defect and the expected improvement. 2. Measure the current performance of the process. Validate data to make sure it is credible and set the baseline. 3. Analyze and determine the root cause(s) of the defects. Narrow the causal factors to the vital few. 4. Improve the process to eliminate defects. Optimize the vital few and their interrelationships. 5. Control the performance of the process. Lock down the gains. BUSSCM 1780 six sigma is designed to provide the student not only with strong theoretical knowledge of the Six Sigma green belt body of knowledge, but also with practical, hands-on, experience-based learning through the application of Six Sigma tools and techniques via in-class labs.

BUSSCM 1785 - FIELD PROJECTS IN GLOBAL SUPPLY CHAINS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade
Course Requirements: PREQ: BUSQOM 0050 and 1070; PLAN: Accounting, Finance, General Management, Global Management, Marketing, Business Information Systems, Human Resources Management, Supply Chain Management, Undeclared CBA majors

BUSSCM 1790 - SUPPLY CHAIN MANAGEMENT INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

BUSSCM 1795 - SUPPLY CHAIN MANAGEMENT INTERNSHIP

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Letter Grade

BUSSCM 1825 - MARITIME SUPPLY CHAIN

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate

This course provides an overview of the maritime supply chain industry. It examines the advantages and barriers of purchasing internationally, global sourcing, purchasing processes, and maritime logistics. This course will focus on Cyprus's unique positioning in Europe as a maritime supplier, the need for careful supply chain analysis with regard to maritime powers, and the considerations necessary in trading with island nations where geography makes shipping an essential part of economic conditions and constraints.
SWAHIL 0101 - SWAHILI 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SWAHIL 0102 - SWAHILI 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0501 or AFRCNA 0523 or SWAHIL 0101; MIN GRADE: ‘C' FOR LISTED COURSES

SWAHIL 0103 - SWAHILI 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0502 or AFRCNA 0524 or SWAHIL 0102; MIN GRADE: ‘C' FOR LISTED COURSES

SWAHIL 0104 - SWAHILI 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0503 or AFRCNA 0525 or SWAHIL 0103; MIN GRADE: ‘C' FOR LISTED COURSES

SWAHIL 0105 - SWAHILI 5

Minimum Credits: 3
Maximum Credits: 3
Swahili 5
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0504 or AFRCNA 0526 or SWAHIL 0104; MIN GRADE: 'C' FOR LISTED COURSES

SWAHIL 0106 - SWAHILI 6

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0505 or SWAHIL 0105; MIN GRADE: 'C' FOR LISTED COURSES

SWAHIL 0107 - SWAHILI 7

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0506 or AFRCNA 0526 or SWAHIL 0106; MIN GRADE: 'C' FOR LISTED COURSES

SWAHIL 0108 - SWAHILI 8

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0507 or SWAHIL 0106; MIN GRADE: 'C'

SWAHIL 0111 - SWAHILI LANGUAGE AND CULTURE IMMERSION

Minimum Credits: 4
Maximum Credits: 4
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SWAHIL 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

SWAHIL 1905 - UNDERGRADUATE TEACHING ASSISTANT IN SWAHILI
Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit

SWAHIL 1909 - SPECIAL TOPICS IN SWAHILI
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SWE 0101 - SWEDISH 1
Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SWE 0102 - SWEDISH 2
Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0511 or SWE 0101; MIN GRADE: 'C' FOR LISTED COURSES

SWE 0103 - SWEDISH 3
Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0512 or SWE 0102; MIN GRADE: 'C' FOR LISTED COURSES
SWE 0104 - SWEDISH 4

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0513 or SWE 0103; MIN GRADE: 'C' FOR LISTED COURSES

SWE 0105 - SWEDISH 5

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0514 or SWE 0104; MIN GRADE: 'C' FOR LISTED COURSES

SWE 0106 - SWEDISH 6

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0515 or SWE 0105; MIN GRADE: 'C' FOR LISTED COURSES

SWE 1615 - SWEDEN - FROM VIKINGS TO NOW

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

SWE 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

SWE 1905 - UNDERGRADUATE TEACHING ASSISTANT IN SWEDISH

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Satisfactory/No Credit
SWE 1909 - SPECIAL TOPICS IN SWEDISH

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 0115 - THE ALEXANDER TECHNIQUE

Minimum Credits: 1
Maximum Credits: 1
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

THEA 0375 - INTRODUCTION TO OPERA

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

THEA 0505 - ENJOY PERFORMANCES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

THEA 0800 - INTRODUCTION TO THEATRE ARTS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 0804 - THEATRE AND COLLABORATION

This introductory course explores performance and seeks to define it as a practice, a theory, and an academic discipline that in each instance remains dynamic and unfinished. The study of multiple performances, whether they be cultural, social, or aesthetic (theatrical) in nature is a constantly changing, shifting observation of instances of interaction. More importantly the instances of performance we will engage are interdisciplinary and intercultural. To be "Inter" is to exist between, or on the way from something to something else. We will view, experience, engage with, wonder at and about all types of performance using both existing and emergent lenses of exploration. The final four weeks of the course will consist of workshops, discussions, and group interaction toward the completion of student created projects.

THEA 0800 - INTRODUCTION TO THEATRE ARTS

This course serves as an introductory theatre class for non-majors, a foundational course for majors and a core course for minors. The purpose of this course is to examine and experience the practice of theatre-how it is created, what it expresses, what it communicates, and the resulting ideas and emotions. Relevant theatre concepts and terms, as well as historical and artistic contexts, will be studied. In addition to analyzing formal dramatic texts, students will develop a theatrical awareness of the world by exploring how theatre exists in everyday life.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Minimum Credits: 3
Maximum Credits: 3
The key to achieving a successful theatrical production is effective communication among all theatre artists during the process of development. Emphasis in this course is placed on collaboration, visualization, research, script interpretation, concept development and performance. Students will be exposed to the work of notable artists in each field and explore theatre making from the vantage point of designers, dramaturgs, playwrights, producers, critics, historians, directors and actors. Over the first two weeks, students will gain a broad base of knowledge regarding the roles and responsibilities inherent in any collaborative theatre process. In the ensuing weeks students will explore a number of contemporary artists and devise their own collaborative projects. Students will become theatre makers.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

THEA 0810 - INTRODUCTION TO DRAMATIC ART

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the study of dramatic texts both in their written and live forms. We will engage various approaches to script analysis in our exploration of a selective set of plays from theatre's long and enduring history. We will consider the relationships between different employments of storytelling and the historical circumstances that influenced them. Remaining always conscious of dramatic art's home on the stage, we will attend and evaluate live performances. Students will apply concepts learned in class through written and oral individual and group assignments.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 0825 - CONTEMPORARY GLOBAL STAGES

Minimum Credits: 3
Maximum Credits: 3
This course covers a specialized topic in Theatre Arts. Topics vary every semester. Current course descriptions can be found on the Dietrich Course Description website.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

THEA 0830 - INTRODUCTION TO PERFORMANCE

Minimum Credits: 3
Maximum Credits: 3
This course is designed to develop the students' awareness of the actor's process and to foster a general sense of theatre as an area of human endeavor. Students will be introduced to basic communication skills, including physical and vocal presence in front of an audience. The course will also develop an introductory level of acting skill through the use of regular warm-ups, theater games, improvisation, and simple scene study. The class will culminate in the performance of a final scene. Scenes will be selected from a diverse range of playwrights and students will examine the political, cultural and social context of each play. The course will also provide an introduction to basic theater terminology, and foster the ability to respond to and reflect on theatrical performances. Each student is required to buy a semester pass and attend university theatre productions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 0840 - INTRODUCTION TO THEATRE DESIGN

Minimum Credits: 3
Maximum Credits: 3
This course is an introduction to the design of scenery, costumes and lights used in theatre. Class work consists of several design projects focusing on
design development, drawing and rendering, and drafting. This course will create an awareness of the role of the designer within the scope of the total collaborative process of theatre production. Students may be required to purchase a semester pass and attend university theatre productions.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**THEA 0842 - INTRODUCTION TO STAGECRAFT**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is a production-oriented course involving the study and application of the process and skills utilized in the realization of theatrical scenery, props, and lighting. This includes standard scenic construction techniques, materials and equipment of the scene shop, an introduction to scenic painting, drafting, properties design and construction, and basic lighting practices. An introduction to basic lighting equipment and stage electrics will also be addressed. This will be emphasized through experience working in the scene shop, on stage, and on department running crews. 45 Hours of work in one of these areas is required for the course.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**THEA 0850 - INTRODUCTION TO SHAKESPEARE**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course introduces the student to Shakespeare as a playwright, that is, a maker of plays for the stage. The objective of this course is to discover how they work on us as an audience. The actual work of the course is close reading of and interaction with the plays, observation and analysis of film and theatrical treatments of Shakespeare's work, as well as examining the cultural and historical context in which these plays were written and have been subsequently produced.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**THEA 0880 - THEATRICAL PRODUCTION**

**Minimum Credits:** 1  
**Maximum Credits:** 1  
A practical application course which gives the student hands-on experience in university theatre productions in one or more of the following areas: scenery/props, costume, lighting, sound, and/or stage management. The goal is to expand the student's knowledge and understanding of production processes through team participation in the presenting of a full production. A student must complete at least 45 hours of work in an assigned area to receive 1 credit. Students must usher for 2 performances during the semester enrolled. Note: this course is offered by appointment.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** LG/SNC Elective Basis

**THEA 1100 - VOICE AND MOVEMENT 1**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will explore the anatomy, physiology, and physicality of the human voice. The approach will be holistic mind, body and vocal practice. Techniques learned and practiced will be applied directly to specific performance assignments throughout the semester. Students will begin by examining and identifying healthy, effective, and expressive voice and body use through the study of film clips. Students will receive an introduction to the practices of master teachers such as Patsy Rodenburg, cicely berry, Kristen Linklater, Tina Landau and Anne Bogart, among others. The work will focus on voice and bodywork as they relate to acting and to any area of life requiring effective communication. Emphasis in text work will be on clarity of thought, physical connection, emotional availability, and clear communication.

**Academic Career:** Undergraduate
THEA 1101 - VOICE AND MOVEMENT 2

Minimum Credits: 3  
Maximum Credits: 3
This course will build on the practices introduced in Voice & Movement 1 including presence, healthy and expressive vocal use, and effective communication. It will introduce the international phonetic alphabet, accents and dialects. Methods of accent and dialect acquisition will include vocal viewpoints, imagery, phonetics, and physical exercises. Students will research dialects and accents using such sources as: the international dialects of English archive, the visual accent archive, audio and visual recordings. Research and techniques will then be expressed through performances of monologues, scenes and poetry. This course culminates with each student's creation and development of a solo dialect performance.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

THEA 1102 - ACTING 1

Minimum Credits: 3  
Maximum Credits: 3
This course is designed to build foundational acting skills using Stanislavski-based exercises such as those devised by Sanford Meisner, Stella Adler and/or Uta Hagen. These exercises aim to develop the actor's ability to listen and respond truthfully in the moment, be present and connect, work with spontaneity, build concentration, and incite the imagination. Students will learn to craft behavior by working on contemporary text and engaging in improvisational exercises with partners as well as a series of solo projects. Students will also explore given circumstances and actions/objectives while working on audition techniques with a monologue. Students will then apply textual analysis skills and build rehearsal technique by bringing him/her-self to life in a role in a scene. This course is a building block and prerequisite for other performance courses in the theatre department. Students interested in the Theater major or minor or who have theatre experience are encouraged to audition into this course (in lieu of Introduction to Performance).

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis  
Course Requirements: PREQ: THEA 0830; PROG: School of Arts and Sciences

THEA 1103 - ACTING 2

Minimum Credits: 3  
Maximum Credits: 3
Acting II builds on the work of Acting I with a deeper exploration of Realism and Naturalism on stage through textual analysis, scene study, physical exercises, research and performance. The material in the course focuses on works of European and American playwrights who may include Anton Chekhov, Rachel Crothers, Henrik Ibsen, Lillian Hellman, August Strindberg, Susan Glaspell, Gerhart Hauptmann, Elsa Berstein (aka Ernst Rosmer), Nikolai Gogol, etc. Theoretical work would be complementary, based on the tradition of practitioners like Constantin Stanislavski, Richard Boleslavsky, Stella Adler and Lee Strasberg, deepening a student's understanding of psychological realism.

Academic Career: Undergraduate  
Course Component: Lecture  
Grade Component: LG/SNC Elective Basis

THEA 1104 - ACTING 3

Minimum Credits: 3  
Maximum Credits: 3
This course focuses on preparing and presenting roles from classical plays. Using heightened text from diverse textual sources including ancient and modern plays and poetry, students will explore language as it applies to character and intention. Actors will build on their foundational acting craft with advanced vocal and physical acting exercises to enhance character, will develop textual analysis and rehearsal skills, and will apply those techniques to performing scenes (ancient Greek playwrights, Elizabethan playwrights and other lyrical writers). Students will perform three scenes.
from various historical periods, at least one of which will be from a Shakespearean text. In addition, students will examine the political, cultural and social context of each play.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: THEA 0830 and 1102; PROG: School of Arts and Sciences

**THEA 1105 - ACTING THE CLASSICS: ANCIENT ATHENS TO SHAKESPEARE'S GROUP**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Students must be highly skilled to enter this intense acting class. They will receive specialized acting training.

**Academic Career:** Undergraduate  
**Course Component:** Practicum  
**Grade Component:** Letter Grade

**THEA 1109 - PERFORMANCE LAB**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course uses the art of spontaneous creation as a tool for enhancing the creativity, responsiveness and immediacy for the actor. Students will be introduced to fundamental improvisational principles that facilitate strong ensemble play, increased awareness, heightened on and off stage observational skills, critical thinking, and spontaneity. The course will introduce both long and short form improvisation, and address basic terminology for the actor and improviser. Upon completion of the course, students will demonstrate facility with the improvisational tenets of 'yes, and' and 'explore and heighten' to enhance their ability to be in the moment during scripted and unscripted scenes. Techniques used in this course will include those of Viola Spolin, Sanford Meisner, Paul Sills, Keith Johnstone and others. The class will culminate in a final performance including text-based acting and improvisation.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: THEA 1102

**THEA 1110 - DIRECTING 1**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course intends to discover, explore, and develop the directorial crafts of the student/director. It addresses the theoretical, analytical, and practical skills requisite to the craft of directing plays for the theatre. Plays of the realistic style will be its primary focus, although some discussion may range over other styles and periods in order to provide the proper context for approaching realistic plays. The student's directing ability will be developed through class discussion and exercises, written assignments, outside reading, and the direction of scenes from realistic plays. Students will learn methods to analyze plot, character and theme in scripts as well as techniques to translate that analysis into clear, vivid stage action.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: THEA 0830

**THEA 1111 - DIRECTING 2**

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course will entail a study of scene analysis and directing projects from plays of 1860-1980. Will deal with the special demands of different playwrights.

**Academic Career:** Undergraduate  
**Course Component:** Lecture
THEA 1120 - DRAMA AND PERFORMANCE IN CLASSROOM

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce drama techniques used in educational settings and to provide students with hands-on experience creating and facilitating various theatre outreach activities. Specific practices to be explored include: activity-based methods such as theatre games & improvisational exercises as well as some theatre of the oppressed techniques; literature-based methods such as story dramatization and textual adaptation; situation-based work such as role drama and other strategies associated with drama-in-education; devised performance strategies often associated with play-building and theatre-in-education, etc. Students will hear from members of education departments of leading arts organizations in Pittsburgh to gain a sense of the broad range of techniques and applications of outreach work. Finally, the class will offer students an opportunity to design, implement, and evaluate outreach-related projects which are thematically linked to the theatre arts department's Shakespeare-in-the schools (sits) touring production. The sits program will serve as a lab experience for students in drama & performance in the classroom.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1121 - THEATRE FOR CHILDREN

Minimum Credits: 3
Maximum Credits: 3
This course will entail a study of the practical aspects of touring theatre for children. The class will offer actual participation in areas such as management, publicity, acting, directing and design. The course is geared toward the full production of a children's play to tour the Pittsburgh area schools.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1226 - STAGECRAFT 2

Minimum Credits: 3
Maximum Credits: 3
This course will entail a study of advanced technical problems through the use of drafting.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1227 - SCENE PAINTING

Minimum Credits: 3
Maximum Credits: 3
This course is a study of scene painting practices for theatre. Students will study the techniques and processes of painting in a studio class atmosphere. Tools and techniques will be demonstrated by the instructor then executed by the student on a large format canvas. Some painting projects may include how to paint marble, foliage, and/or woodgrain.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1229 - STAGE MANAGEMENT 1

Minimum Credits: 3
Maximum Credits: 3
Principles and techniques of stage and production management as applied to professional, educational, and community theatre. Studies will include
auditions, rehearsal process and organization; technical and performance process and procedures; production personnel and cost management.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### THEA 1230 - STAGE LIGHTING 1

**Minimum Credits:** 3  
**Maximum Credits:** 3  
An introduction to Stage Lighting including awareness of light, instrumentation, color theory, texture, control, basic theatrical electricity and artistic design, with an emphasis on the organization of theatrical lighting. This course will reflect the study of lighting as an art form, including design concepts, light plots, artistic elements of theatre, sequential cue relationships, and script analysis.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### THEA 1231 - STAGE LIGHTING 2

**Minimum Credits:** 3  
**Maximum Credits:** 3  
Using lecture, lab projects, and critique to develop the communication and implementation of ideas in lighting, while also exploring the artistic and conceptual practices of design. Advancing the development of working process consistent with current professional practices in the field of Lighting Design.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### THEA 1235 - SCENE DESIGN 1

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This is an introduction to scenic design for the theatre exploring creative uses of space to tell stories on stage. Topics covered may include introductions to script analysis, visual research, color theory, basic perspective sketching, model building, and drafting. This course will reflect the current industry practices in scenic design as an art form and may include introductions to contemporary software used in the field.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

### THEA 1240 - COSTUME PRODUCTION AND TECHNOLOGY

**Minimum Credits:** 3  
**Maximum Credits:** 3  
This course is a production-oriented studio course involving the processes and skills utilized in the realization of theatrical costumes. The student will develop an understanding of the costume production process in addition to acquiring the skills necessary in the aid of the construction and completion of theatrical costumes. The student will learn basic hand sewn stitches and fasteners, proper use and operation of the sewing machinery. The student will also learn basic functions of the personnel in the costume shop, health and safety, fabric and textiles, draping, commercial and drafted patterning and costume finishing. Lectures, demonstrations and projects will supplement work done in class. Practical experience is obtained through lab hours which are obtained by working outside of class time in the costume shop on departmental theatre productions (30 hours) or get involved backstage on the wardrobe run crew. These experiences provide the students opportunities to practice skills learned in the classroom.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

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THEA 1245 - STAGE MAKEUP

Minimum Credits: 3
Maximum Credits: 3
This course will offer the student a practical guide to the theory and practice of theatrical makeup and design. The student will learn how to conduct conceptual research, attain a basic skill level in stage makeup application and color selection. Using the student's own face as a canvas, this course will familiarize students with fundamental makeup techniques, equipment, and materials. Through a combination of reading assignments, lectures, supervised demonstrations and practice sessions students will explore the relationship between the theatrical makeup designer, performer and character development thru stage makeup. The course will also introduce the student to entry level specialty/special FX makeup techniques and skills. Professional Makeup kit and textbook are required for this course.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1246 - COSTUME DESIGN 1

Minimum Credits: 3
Maximum Credits: 3
This course is a foundation for the study of the basic principles, practices and techniques of costume design for the stage. Skills and methodologies used in this course will include: how the elements and principles of design relate to and are utilized in costume design; collaboration; script and character analysis; research methods; an introduction to fashion and dress history as it relates to the assigned play; fabric selection; figure drawing and costume rendering techniques.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1338 - MUSICAL THEATRE PERFORMANCE

Minimum Credits: 3
Maximum Credits: 3
This course is designed to introduce students to the foundational elements of the musical theatre performer's process and to examine the use of song in a theatrical context as a mode of human expression. Students will be introduced to the fundamentals of vocal structure and technique as well as physical and vocal presence in front of an audience within the context of specific genres/ style periods of musical theatre. Fundamental acting techniques will be developed in the context of musical theatre practice through the use of regular warm-ups, theater games, improvisation, and study of song texts. Each of the three main units of the course, ensembles, duets and solo songs, will culminate in a public performance of the pieces studied in class. Standard professional practices for musical preparation and auditions will also be addressed and will include a mock audition process at the end of the term. Students will be required to attend a full production of a musical and will develop critical analytical skill through written reflection on that production as well as on their own development throughout the term.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1341 - WORLD THEATRE: 500 BCE TO 1640

Minimum Credits: 3
Maximum Credits: 3
World theatre 500 BC to 1640 investigates histories of theatre and performance (scripts, embodiment, design, audiences, conventions, cultural functions, etc.) Within local and global social, artistic and political contexts, from classical Athens to Edo Japan, colonial Mexico city to Shakespeare's globe. The course focuses on evidence and interpretation as well as historical causation.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1342 - WORLD THEATRE: 1640 TO 1890
Minimum Credits: 3
Maximum Credits: 3
This course is the second in a world theatre history sequence designed to explore the development of dramatic forms and theatre practices from the 5th century B.C.E. to the present. In World Theatre: 1640 to 1890 we will discuss the history of theatre arts which includes looking at drama, design, performance traditions and audiences—from the comedies of Restoration England to emerging realism of Buchner, Zola and Ibsen. Framed by questions of documentary interpretation and historical causation, the course will analyze the larger contexts of theatrical events, including social and political history, as well as the development of non-theatrical art forms. In addition, we will discuss some contemporary scholarship examining these theatrical events.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1343 - WORLD THEATRE: 1890-Present

Minimum Credits: 3
Maximum Credits: 3
This is the third in a world theatre history sequence designed to explore the development of dramatic forms and theatre practices from the 5th century B.C.E. to 1970. In world theatre: 1890 to Present, we will discuss the history of the theatrical arts which includes looking at drama, design, performance traditions and audiences from the late dramas of Ibsen to the plays of Beckett and Pinter. Framed by questions of documentary interpretation and historical causation, the course will analyze the larger contexts of theatrical events, including social and political history, as well as the development of non-theatrical art forms. Our focus will be on Western theatre with occasional references to non-Western forms of performance and production. In addition, we will discuss some contemporary scholarship examining these theatrical events.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: LVL: So, Jr, or Sr; PROG: School of Arts and Sciences

THEA 1351 - GREEK AND ROMAN THEATRE

Minimum Credits: 3
Maximum Credits: 3
This is a study of how theatre began in ancient Athens and Rome. Readings of major comedies and tragedies are required.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1360 - THEATRE CRITICISM

Minimum Credits: 3
Maximum Credits: 3
A practical course in the craft of theatre criticism. The class attends local theatrical productions and writes weekly reviews. Course is designed to develop skills in interpretation of the theatrical art, in understanding of how the play operates in the theatre, and in creative writing. Each student receives individual attention to interpretation problems.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1361 - FORMS OF JAPANESE THEATRE

Minimum Credits: 3
Maximum Credits: 3
This course provides a survey of various major forms of Japanese theatre using English language materials. Students will have access to relatively ancient forms of Japanese theatre such as kagura and noh, kabuki drama and the bunraku puppet theatre through film and videocassette. The modern and avant-garde theatre are also accessible through translation and videocassette material.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1365 - PLAYWRITING 1

Minimum Credits: 3
Maximum Credits: 3
This is a beginning course in the craft of playwriting. Students will read eight outside plays, will write seven scripts—the last of which is a one-act—and will critique, read aloud, and discuss the work of others in the class. Seminar/workshop style. Attendance is mandatory. Recommended: two courses from among the following three areas: performance, dramatic literature, creative writing.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1366 - PLAYWRITING 2

Minimum Credits: 3
Maximum Credits: 3
Playwriting II advances beyond and builds upon the craft exercises and 20 page one acts of Playwriting I to workshop students' ongoing projects. This work might take the form of a brace or trio of one acts, an hour long portion of a full length play, or other projects to be approved by the instructor. Workshop method. Revision required. This course fulfills the W requirement.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: THEA 1365 or ENGWRT 1650

THEA 1390 - NEW PLAY PRACTICUM

Minimum Credits: 3
Maximum Credits: 3
The New Play Practicum is an advanced course designed for theatre artists (playwrights, directors, actors, mainly though there is room for stage management duties) to try the new scripts produced by students in Playwriting 2 and in some cases from Playwriting 1. The scripts will be assigned in class, table-workshopped at first, and then assigned to teams. Most rehearsals will take place outside of class with the aim of presenting seated readings or staged readings as we can in lunchtime venues throughout the term. Teamwork is key. Each student will have several practical assignments; written assignments will be tailored to each student's needs.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

THEA 1391 - SPECIAL TOPICS: THEATRE DESIGN

Minimum Credits: 3
Maximum Credits: 3
This is an introduction to the concepts and techniques used to design and draw props, weapons, vehicles, environments, and characters for the Theatre, Illustration, TV, Film, and Video Game industries. Topics covered will be basic perspective techniques, sketching and communicating design ideas, elements of line art, and digital drawing skills. The course is project-based, where each project builds on skills from the previous one resulting in a broad spectrum of design and drawing challenges. Students will choose the universe and technological levels for each project, allowing students to work on projects in a variety of interests from Sci-Fi, to Fantasy, to Medieval, to Contemporary.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1392 - SPECIAL TOPICS IN PERFORMANCE
THEA 1393 - THEATRE AND THE BLACK LIVES MATTER MOVEMENT

Minimum Credits: 3
Maximum Credits: 3
We will collectively read contemporary theatrical, political, theoretical and sociological works that engage with race in the United States, Black Lives Matter, white silence, and ally capacity building. Some of us may be just learning how to talk about the above; some of us may live it daily. Theatrical pieces, plays and performance, function as the spine for our work, around which contextual critical and historical works will coalesce. We will also actively engage with journalistic and social media, as well as films, music and dance, both in Pittsburgh and beyond. The reading and viewing materials in the course are inspired by American Theatre Magazine's, Ferguson Theatre Syllabus, and Prof. Frank Leon Roberts, (NYU Gallatin) Black Lives Matter Movement syllabus.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

THEA 1401 - BUSINESS MANAGEMENT

Minimum Credits: 3
Maximum Credits: 3
Career development for performers. The aim of this course is to introduce theatrical performers to the resources and opportunities available in theatre professions, related fields, and continuing education. The objectives are to assist the student in identifying academic and career goals and developing strategies for achieving a successful process. Performers will develop audition material, resumes, headshots and related materials necessary for the successful attainment of their career objectives. In addition, students will be asked to think in a larger context anticipating long range planning to consider.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

THEA 1404 - PERFORMING

Minimum Credits: 1
Maximum Credits: 3
Students will get credit for participating in productions of the three rivers Shakespeare festival. Work schedules are flexible and can be established by contract between the student and the area supervisor.
Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

THEA 1480 - DIRECTED PROJECT SCENERY/PROPS

Minimum Credits: 1
Maximum Credits: 3
Students will work directly with the scenic faculty and staff on department productions on either theoretical or practical projects.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis
THEA 1481 - DIRECTED PROJECT COSTUME/MAKEUP

Minimum Credits: 1
Maximum Credits: 3
Students will work directly with the costume faculty and staff on department productions on either theoretical or practical projects.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

THEA 1482 - DIRECTED PROJECT LIGHTING/SOUND

Minimum Credits: 1
Maximum Credits: 3
Students will work directly with the lighting/sound faculty and staff on department productions on either theoretical or practical projects.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

THEA 1483 - DIRECTED PROJECT DIRECTING/PERF

Minimum Credits: 1
Maximum Credits: 3
This course will entail a study of acting and directing, concentrating on the problems and techniques of the realistic/naturalistic styles and other 20th century corollaries.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

THEA 1484 - DIRECTED PROJECT BUSINESS MGT

Minimum Credits: 1
Maximum Credits: 3
Students will work directly with the design and tech faculty and staff on department productions on either theoretical or practical projects.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

THEA 1485 - DIRECTED PROJECT STAGE MANAGEMENT

Minimum Credits: 1
Maximum Credits: 3
Students will work directly with the stage management faculty and staff on departmental productions on either theoretical or practical projects.
Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

THEA 1486 - DIRECTED PROJECT DRAMATURGY

Minimum Credits: 1
Maximum Credits: 3
This course involves studying the practice and theory of dramaturgy under the direct supervision of a faculty member. Depending on the student's area of interest and experience, the course may focus on dramaturgy at the introductory level or a more specialized dramaturgy project.
Academic Career: Undergraduate
THEA 1487 - DIRECTED PROJECT UNDERGRAD TEACHING ASSISTANT

Minimum Credits: 1
Maximum Credits: 3
Students will work directly with a faculty member as a Teaching Assistant for a course. To be eligible for a T.A. position, students must: be a Theatre Arts Major or Minor, be at least an emerging Junior or farther in their academic career, have completed both THEA 0804 and THEA 0810, be in good academic standing with a GPA of 3.0 or better, and have completed the course in which the TA position is sought, earning a 3.5 or better in the class. This Directed Study can be taken for 1-3 credits depending on the amount of work and class time agreed upon with the instructor of record. Permission from the Director of Undergraduate Studies in the Theatre Department and the faculty member acting as Instructor of Record is required. Please see the Director of Undergraduate Studies in the Theatre Department for more details.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: Letter Grade

THEA 1488 - THEATRE PRODUCTION

Minimum Credits: 1
Maximum Credits: 3
This course will entail participation in the theatre arts department's productions in one of several categories for upper classmen and graduate students.

Academic Career: Undergraduate
Course Component: Practicum
Grade Component: LG/SNC Elective Basis

THEA 1498 - DIRECTED RESEARCH: THEATRE ARTS

Minimum Credits: 1
Maximum Credits: 6
Independent work on a project in theatre, supervised by a member of the theatre faculty.

Academic Career: Undergraduate
Course Component: Directed Studies
Grade Component: LG/SNC Elective Basis

THEA 1500 - MODERN ACTING

Minimum Credits: 3
Maximum Credits: 3
This course builds students' acting skills and styles. It provides the means through which students may develop or expand their acting abilities through practical work with a variety of scripts, focusing primarily on 20th-century English plays. This course has been designed based upon the technical foundations established by Stanislavky, and requires students to develop acting skills through exercises and methods taken from a mixture of America, European, as well as Russian acting traditions. Such techniques are fundamental to most lessons given at British universities and acting schools and are often used throughout rehearsals in the context of professional productions.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

THEA 1501 - SHAKESPEARE ACTING

Minimum Credits: 3
Maximum Credits: 3
In this course students develop a fluency in Shakespeare's rhetorical style through practical study, performing extracts from Shakespeare plays as well as speaking a Sonnet. The course will enable students to place Shakespeare firmly in the context of his own time, as well as in ours. The course
gives an introduction to the rules of rhetorical theatre, with particular reference to the role of the iambic pentameter in Shakespeare's plays. Students are shown how to ‘work’ a line to the point of delivery, through attention to meaning, scansion, stress and breathing.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** Letter Grade

**THEA 1900 - INDEPENDENT STUDY**

- **Minimum Credits:** 1  
- **Maximum Credits:** 6  

The terms of the student's independent study will be agreed upon by the instructor and the student.

**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**THEA 1901 - INTERNSHIP**

- **Minimum Credits:** 1  
- **Maximum Credits:** 6  

The location and terms of the student's internship will be agreed upon by the instructor and student.

**Academic Career:** Undergraduate  
**Course Component:** Internship  
**Grade Component:** LG/SNC Elective Basis

**THEA 1903 - SEMINAR IN THEATRE ARTS**

- **Minimum Credits:** 3  
- **Maximum Credits:** 3  

This course covers a specialized topic in Theatre Arts. Topics vary every semester. Current course descriptions can be found on the Dietrich Course Description website.

**Academic Career:** Undergraduate  
**Course Component:** Seminar  
**Grade Component:** Letter Grade

**TURKSH 0101 - TURKISH 1**

- **Minimum Credits:** 4  
- **Maximum Credits:** 4  

The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

**TURKSH 0102 - TURKISH 2**

- **Minimum Credits:** 4  
- **Maximum Credits:** 4  

At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.

**Academic Career:** Undergraduate  
**Course Component:** Lecture
TURKSH 0103 - TURKISH 3

Minimum Credits: 3
Maximum Credits: 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to reading as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0561 or TURKSH 0101; MIN GRADE: 'C' FOR LISTED COURSES

Minimum Credits: 3
Maximum Credits: 3
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0562 or TURKSH 0102; MIN GRADE: 'C' FOR LISTED COURSES

TURKSH 0105 - TURKISH 5

Minimum Credits: 3
Maximum Credits: 3
Students in this course will: refine and consolidate their language skills in everyday communicative situations covered in Turkish 1 through 4; expand and build on their language skills in more complex communicative situations that require creative and resourceful use of the Turkish Language; learn to express themselves creatively in both spoken and written Turkish at higher levels of articulation with context specific vocabulary, cultural formulas and grammar forms; and, advance their skills in reading and comprehending various types of texts with advance level grammar forms. Focus will be on communicative competence grounded in solid knowledge of grammar, writing, listening and reading comprehension skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0563 or TURKSH 0103; MIN GRADE: 'C' FOR ALL LISTED COURSES

TURKSH 0106 - TURKISH 6

Minimum Credits: 3
Maximum Credits: 3
Students in this course will: refine and consolidate their language skills in everyday communicative situations covered in Turkish 1 through 5; expand and build on their intermediate level language skills in more complex communicative situations that require creative and resourceful use of language skills; learn to express themselves creatively in both spoken and written Turkish at higher levels of articulation with context specific vocabulary, cultural formulas and grammar forms; and advance their skills in reading and comprehending various types of texts with advance level grammar forms. Focus will be on communicative competence grounded in solid knowledge of grammar, writing, listening and reading comprehension skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: TURKSH 0105; MIN GRADE 'C'

TURKSH 0107 - TURKISH 7

Minimum Credits: 3
Maximum Credits: 3
Students in this course will: refine and consolidate their language skills in everyday communicative situations covered in Turkish 1 through 6; expand and build on their language skills in more complex communicative situations that require creative and resourceful use of the Turkish Language; learn to express themselves creatively in both spoken and written Turkish at higher levels of articulation with context specific vocabulary, cultural formulas and grammar forms; and advance their skills in reading and comprehending various types of texts with advance level grammar forms. Focus will be on communicative competence grounded in solid knowledge of grammar, writing, listening and reading comprehension skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: TURKSH 0106; MIN GRADE 'C' FOR ALL LISTED COURSES

TURKSH 0108 - TURKISH 8

Minimum Credits: 3
Maximum Credits: 3
Students in this course will: refine and consolidate their language skills in everyday communicative situations covered in Turkish 1 through 7; expand and build on their language skills in more complex communicative situations that require creative and resourceful use of the Turkish Language; learn to express themselves creatively in both spoken and written Turkish at higher levels of articulation with context specific vocabulary, cultural formulas and grammar forms; and, advance their skills in reading, comprehending, interpreting, translating and transcribing various types of texts with advance and superior level grammar forms. Focus will be on communicative competence grounded in solid knowledge of grammar, writing, listening and reading comprehension skills.

Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: TURKSH 0107; MIN GRADE 'C'

TURKSH 1615 - TURKISH CULTURE AND SOCIETY

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

TURKSH 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 9
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: LG/SNC Elective Basis

TURKSH 1905 - UNDERGRADUATE TEACHING ASSISTANT IN TURKISH

Minimum Credits: 1
Maximum Credits: 3
Academic Career: Undergraduate
TURKSH 1909 - SPECIAL TOPICS IN TURKISH

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

URBNST 0080 - INTRODUCTION TO URBAN STUDIES

Minimum Credits: 3
Maximum Credits: 3
This course serves as the required introduction into the Urban Studies major or as a general course in the social sciences for the non-major. The course explores the problems and potentials of cities by combining the various disciplinary perspectives—economics, Africana studies, history, political science, sociology, and anthropology. As the course is providing the students with the necessary concepts and information to understand cities, the students will be developing their own skills through field trips, debates, group presentations and journal writing.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: Restricted ARTSC UGRD Students

URBNST 0400 - CRIME, PUNISHMENT, JUSTICE, REINTEGRATION

Minimum Credits: 3
Maximum Credits: 3
This course will focus on the concept of punishment as a response to a criminal act. While in religiously-grounded societies punishment is seen as a retribution for an evil act, tendencies in modernity (and post-modernity) privilege the use of punishment as a tool for social reintegration. With the rise of human rights-based doctrines, the characterization of punishment as retribution has proven to be more and more difficult to justify. Even if sayings such as "paying my debt to society" are still in use, it is becoming more and more evident - especially in a time of mass incarceration - how incarceration as punishment cannot be the only solution. This course exposes students to ideas of justice as a process aimed at reintegrating wrong-doers in society through a path of reconciliation and re-socialization, so that the end of the process will produce fellow citizens rather than ex-felons.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

URBNST 1005 - SPECIAL TOPICS

Minimum Credits: 3
Maximum Credits: 3
This course will entail the exploration of a specific urban topic.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

URBNST 1102 - INTRODUCTION TO GIS

Minimum Credits: 3
Maximum Credits: 3
Geospatial data are digital representations of our physical world. As such, many public policy programs are critically informed by applications of geospatial data. This course will teach students how to acquire, manage, analyze, and visualize spatial data using ArcGIS Desktop. Students will also be introduced to applied data analysis using R. R is powerful, free, and flexible software used in many "big data" application. Assignments,
applications, and course discussion will emphasize contemporary issues in public policy. Upon completing this course, students should expect to be proficient in basic GIS analysis and prepared for more advanced statistical coursework.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

URBNST 1104 - APPLIED GIS

Minimum Credits: 3
Maximum Credits: 3
This course provides an introduction to core methods for analyzing geo-spatial data, questions and applications with an emphasis on spatial and cluster analysis of point data using ArcGIS desktop. It will focus on teaching students the principles of GIS through computer-based exercises. Classroom projects will train students in acquiring, constructing, and managing geo-spatial data in order to solve spatially explicit problems. Exercises and projects will be geared toward equipping students with the set of quantitative tools that are relevant to courses taught in the urban studies program, especially courses taken by students in the planning and politics concentrations. This will provide students with the background for pursuing advanced work in urban economic geography, public administration, economic and community development, and regional analysis. However, the core methods presented in this course form the foundation for quantitative work in political science, sociology, and economics as well. This is a self-contained course. Students who have taken courses in Introduction to GIS or Introductory Statistics will find such courses useful, but they are not essential.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

URBNST 1200 - URBAN STUDIES FIELD RESEARCH SEMINAR

Minimum Credits: 3
Maximum Credits: 3
This course introduces students to the urban studies methodology of “field study”. The class will go on field trips to Pittsburgh communities that epitomize current urban problems and issues. Readings and classroom discussions will focus on how to "read" the urban landscape as well as provide background on current urban problems.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

URBNST 1300 - URBAN SKILLS SEMINAR

Minimum Credits: 3
Maximum Credits: 3
In this course students will learn and apply a set of basic research and communication skills relevant to work in urban settings. After active participation in the course, students will be able to locate data, analyze in thorough and theory based fashion, and present clearly and persuasively. Skills include defining a research question, questionnaire design and interviewing, finding and interpreting secondary data, using pc based spreadsheet, database and presentation software and participating on a team. Coursework is organized around real world problems.

Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

URBNST 1406 - POPULAR CULTURE & IDENTITY IN IRELAND

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade
URBNST 1408 - GLOBAL CITY - FLORENCE
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

URBNST 1410 - GLOBAL CITY - LONDON
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: Letter Grade

URBNST 1414 - GLOBAL CITY - SYDNEY
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

URBNST 1416 - ANALYZING & EXPLORING THE GLOBAL CITY: BUENOS AIRES
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

URBNST 1418 - GLOBAL CITY - SHANGHAI
Minimum Credits: 3
Maximum Credits: 3
This three-credit course is designed to encourage students to engage in a critical analysis of the development of modern Shanghai. It is a municipality that already exhibits the key characteristics of many global cities. Students will discuss what that concept means in general terms, and in ways that are specific to Shanghai. Students will explore how this city has been imagined, invented, and transformed by the forces of foreign engagement, industrialization, and globalization. The cityscape and social landscape of Shanghai are the "texts" that student will explore, interpret, and analyze.
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

URBNST 1420 - CITY SYMPHONY
Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

URBNST 1422 - URBAN SCAVENGER
URBNST 1500 - URBAN RESEARCH SEMINAR

Minimum Credits: 3  
Maximum Credits: 3  
The Urban Research Seminar focuses the knowledge and skills, which the student has gained through the program, on a particular topic. The specific topic varies from term to term and faculty member to faculty member, but it always concerns an issue of relevance to the immediate Pittsburgh environment. Examples include riverfront development, the impact of Reagan's cutbacks, the redevelopment of East Liberty, etc. To investigate the topic students will review secondary sources as well as collect and analyze their own information through interviews, field trips, surveys, etc.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade  
Course Requirements: PREQ: URBNST 0080 and 1300PLAN: Urban Studies (BA or BPH)

URBNST 1502 - FIELD ANALYSIS OF GLOBAL URBANISM

Minimum Credits: 3  
Maximum Credits: 3  
This course presents University of Pittsburgh students with the opportunity to travel to Singapore and Malaysia for a two-week Urban Studies field course, guided by Pitt faculty. This 3-credit IFTA (integrated Field Trip Abroad) is a base three-credit course that facilitates comparative analysis of urban processes in two strategic Southeast Asian cities. This course is available to all Pitt undergraduates, and does not include any prerequisite courses. The course consists of lectures and site visits to places of significant urban interest in both Singapore and Kuala Lumpur. Students will complete readings and discussions about urban processes in both cities, and will develop a blog and independent reports about these places. The content for this three-credit course will be contained within the two-week field course, and will focus on Asian urbanization, consumption, and sustainable city development.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

URBNST 1504 - ADVANCED INTERNATIONAL FIELD PLACEMENT

Minimum Credits: 3  
Maximum Credits: 3  
This course presents Urban Studies students with the opportunity to travel to Singapore and Malaysia for a two-week Urban Studies field course, guided by Pitt faculty. This 3-credit IFTA (integrated Field Trip Abroad) is a three-credit course that supplements URBNST 1502, and your domestic research courses (URBNST 1300 & URBNST 1500). Therefore, it is expected that you will have previously completed 1300 and 1500, and be taking URBNST 1502 concurrently with this course. The course focuses upon design and implementation of a pilot research project that attempts a comparative analysis of some aspect of urbanism within Southeast Asia. Students will work in teams to complete this project, under the supervision of Pitt Faculty. This three-credit course will be preceded by five pre-departure meetings, and the research project should in some way focus on one of the course themes.

Academic Career: Undergraduate  
Course Component: Seminar  
Grade Component: Letter Grade

URBNST 1608 - URBAN ECONOMIC GEOGRAPHY

Minimum Credits: 3  
Maximum Credits: 3  
Participants in this course will learn about the evolving forms of metropolitan government and governance in the United States, with a special focus
on the post-1992 period. Course units examine the history and contemporary shape of urban politics, and the opportunities and challenges facing local communities during the 21st century. By the end of the course students will be able to appraise how the contemporary landscape of regional governance in the United States is affecting specific cities.

**URBNST 1610 - URBAN POLITICS AND REGIONAL GOVERNMENT IN GLOBAL PERSPECTIVE**

- **Minimum Credits:** 3
- **Maximum Credits:** 3

Participants in this course will learn about how the evolving forms of neoliberalism are shaping metropolitan government and governance. Course units examine the history and contemporary shape of urban politics, and the opportunities and challenges facing local communities during the 21st Century. By the end of the course students will be able to appraise how the contemporary landscape of urban and regional politics is affecting citizens and communities in the United States and internationally. The course consists of lectures, in-class discussions, films, student presentations and exams. Students will read a range of current and topical materials from sources including national newspapers, academic publications, policy documents and global case studies.

**Academic Career:** Undergraduate

**Course Component:** Seminar

**Grade Component:** LG/SNC Elective Basis

**URBNST 1612 - SOCIAL JUSTICE AND THE CITY**

- **Minimum Credits:** 3
- **Maximum Credits:** 3

Social justice and economic justice are popular buzz-words that are closely tied to urban environments: but what do they really mean, and how can we understand them? URBNST 1612 uses critical social geography to interrogate both historical and contemporary social justice movements that claim to protect human rights, fair housing, or to expand definitions of public space and citizenship. Taken together these agendas form a powerful prescription for social action, one often emerging in urban settings. Using a combination of lectures, Concept Mapping exercises, and case studies, we will examine the historical and theoretical context for social justice in the city and then evaluate different geographies of social change. By the end of the course students will be able to use a critical perspective to understand how the rhetoric of social justice is changing the urban geographies of specific cities worldwide.

**Academic Career:** Undergraduate

**Course Component:** Seminar

**Grade Component:** Letter Grade

**URBNST 1613 - SUSTAINABLE CITIES 1: THEORIES AND CONCEPTS**

- **Minimum Credits:** 3
- **Maximum Credits:** 3

**Academic Career:** Undergraduate

**Course Component:** Seminar

**Grade Component:** Letter Grade

**URBNST 1614 - URBAN SUSTAINABILITY**

- **Minimum Credits:** 3
- **Maximum Credits:** 3

This course provides a critical introduction to the concept of sustainability in relation to cities in the United States and internationally. We will investigate how the fuzzy concept of sustainability has developed, and look at how principles of urban sustainability are put into practice. In particular, we will look at the Pittsburgh city-region, and draw on examples from Singapore, Auckland (New Zealand), and Tianjin (China). In particular, the class will concentrate on how sustainability is embedded in planning urban structures, organizing for sustainable communities, and mitigating environmental risks and vulnerability. Students will hear from a variety of professionals engaged in sustainable urbanism, and learn about specific tools used to assess sustainability at different geographic scales.
URBNST 1615 - SUSTAINABLE CITIES 2: FIELD RESEARCH

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: Letter Grade

URBNST 1616 - RENT, BUY OR SQUAT: HOUSING AND PROPERTY IN US CITIES

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

Housing is the basic building block of the city. Whether you rent or own, shelter is a basic necessity for urban life, but how does housing work? This survey course explores the changing forms of urban housing in the United States, and introduces you to the people and organizations responsible for housing from developers, bankers and landlords to local, federal, and non-profit agencies.

URBNST 1700 - INTERNATIONAL URBANISM SEMINAR

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

Course Requirements: PREQ: URBNST 0080

URBNST 1708 - WORLD URBAN PATTERNS

Minimum Credits: 3
Maximum Credits: 3
Academic Career: Undergraduate
Course Component: Seminar
Grade Component: LG/SNC Elective Basis

Course Requirements: PREQ: URBNST 0080

On May 23, 2007, for the first time in human history, more of the world's population became urban than rural. This course explores two related aspects of global urbanization: changing patterns of urban growth and urbanization, and similarities and differences in the nature of urban processes at the regional level. This course begins by exploring the causes of urbanization, factors driving urban growth, impacts of globalization, and regional variations in urbanization levels at a variety of scales including the global north and global south. In contrast, the second part of the course focuses on the differences and similarities in the characteristics of the economic, social, demographic, and cultural processes that shape urban places and urban life in different regions of the world. The topics covered include, but are not limited to, residential and commercial gentrification, residential segregation, gated communities, common interest developments, and sustainability.

URBNST 1900 - URBAN FIELD PLACEMENT
Minimum Credits: 3
Maximum Credits: 6
This course gives the Urban Studies major the opportunity to get off the campus and into the community. It allows the student to relate his or her academic training to a real world situation by working in an urban related organization or agency. The student works under the combined supervision of the agency personnel and the urban studies advisor. The student is required to keep a journal, attend scheduled meetings with other field placement students and write a final reflective paper.
Academic Career: Undergraduate
Course Component: Internship
Grade Component: Satisfactory/No Credit
Course Requirements: PLAN: Urban Studies (BA or BPH)

URBNST 1901 - INDEPENDENT STUDY

Minimum Credits: 1
Maximum Credits: 6
Individual project administered under the supervision of a faculty member.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade
Course Requirements: PLAN: Urban Studies (BA or BPH)

URBNST 1903 - URBAN STUDIES HONORS THESIS

Minimum Credits: 3
Maximum Credits: 3
This course is only for people who will be writing an honors thesis.
Academic Career: Undergraduate
Course Component: Independent Study
Grade Component: Letter Grade

VIET 0101 - VIETNAMESE 1

Minimum Credits: 4
Maximum Credits: 4
The greatest part of the first term will be devoted to the presentation and practice of the basic sound patterns of the language, its fundamental sentence patterns, and sufficient vocabulary to illustrate and practice them. An introduction to the writing system will be offered together with the opportunity to acquire elementary writing and reading skills.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis

VIET 0102 - VIETNAMESE 2

Minimum Credits: 4
Maximum Credits: 4
At the end of the second term of the first year of study the student should be able to produce all the significant sound patterns of the language, to recognize and use the major grammatical structures within a limited core vocabulary. The student should be able a) to engage in simple conversations with native speakers about a limited number of everyday situations and b) to read and write simple material related to the situations presented.
Academic Career: Undergraduate
Course Component: Lecture
Grade Component: LG/SNC Elective Basis
Course Requirements: PREQ: LING 0581 or VIET 0101; MIN GRADE: 'C' FOR LISTED COURSES

VIET 0103 - VIETNAMESE 3
The first term of the second year will concentrate on the further development of fluency in oral production and the improvement in the student's ability to understand the flow of speech as uttered by a native speaker. Increased attention will be paid to readings as a means of augmenting a recognition vocabulary and writing as a drill and as a means of consolidating and communicating the knowledge gained.

**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0582 or VIET 0102; MIN GRADE: 'C' FOR LISTED COURSES

**VIET 0104 - VIETNAMESE 4**

Minimum Credits: 3  
Maximum Credits: 3  
At the end of the second term of the second year the student should be able to converse comfortably with a native speaker on a variety of non-specialized subjects. The student will be offered an opportunity to experience and more fully understand the culture of the people who use the language through readings of various types. More complex writing tasks will be expected at this level.  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis  
**Course Requirements:** PREQ: LING 0583 or VIET 0103; MIN GRADE: 'C' FOR LISTED COURSES

**VIET 1901 - INDEPENDENT STUDY**

Minimum Credits: 1  
Maximum Credits: 9  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** LG/SNC Elective Basis

**VIET 1905 - UNDERGRADUATE TEACHING ASSISTANT IN VIETNAMESE**

Minimum Credits: 1  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Independent Study  
**Grade Component:** Satisfactory/No Credit

**VIET 1909 - SPECIAL TOPICS IN VIETNAMESE**

Minimum Credits: 3  
Maximum Credits: 3  
**Academic Career:** Undergraduate  
**Course Component:** Lecture  
**Grade Component:** LG/SNC Elective Basis

The same examination, thesis, or dissertation cannot be used to fulfill requirements for two independent degrees, although a maximum of 6 credits of course work may be used in partial fulfillment of the requirements of both degrees. It is the responsibility of the dean or deans, if two schools are involved, to ensure that this regulation is enforced.

**Cooperative, Dual-Degree, and Joint-Degree Programs**
Dual- and joint-degree programs result in two degrees being awarded. Requirements for these programs include all or most of the requirements of two distinct academic degree programs. These programs may result in a student earning two separate master's degrees, a master's and a first-professional degree, or a master's or first-professional degree and a doctoral degree, but never result in a student earning two separate doctoral degrees. Dual programs exist within a single school; joint programs exist between two or more schools; cooperative programs are administered by two or more institutions. The same course, examination, or thesis may be used to fulfill requirements only if so specified in the documents formally establishing the joint- or dual-degree program approved by the University.

Students must be admitted to both academic programs offering the dual or joint degrees being sought and must graduate from both degree programs at the same time. Students are advised to see the individual school for other specific requirements that apply.