### Lower Division General Education Requirements

**A. Skills**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>VCCS Transfer Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6 hours</td>
<td></td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>3</td>
<td>AS/ENG 111</td>
</tr>
<tr>
<td>ENGL 211C</td>
<td>3</td>
<td>AS/ENG 112, 210, or 115, 113</td>
</tr>
</tbody>
</table>

**Oral Communication**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101R, 103R, 112R</td>
<td>3</td>
<td>CST 100, 105, 110, 111, 112, or 126</td>
</tr>
</tbody>
</table>

**Mathematics**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 162M</td>
<td>3</td>
<td>satisfied in the major</td>
</tr>
</tbody>
</table>

**Language and Culture**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 112L, 114L, or FLET 100L</td>
<td>3</td>
<td>AS/ITE 119</td>
</tr>
</tbody>
</table>

**Information Literacy**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 120G or CS 121G</td>
<td>3</td>
</tr>
</tbody>
</table>

**B. Ways of Knowing**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>VCCS Transfer Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Creativity</td>
<td>3 hours</td>
<td></td>
</tr>
<tr>
<td>ARTH 121A, ARTS122A</td>
<td>3 AS/ART 100–106, 111–114, 152, 231, 232, 250; MUS 121, 122, 125; CST 130, 141, 142, 151, 152, 231, 232, 250;</td>
<td></td>
</tr>
<tr>
<td>DANC 185A, MUSC 264A, THEA 241A, COMM/THEA</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**History**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 100H, 101H, 102H, 103H, 104H, 105H</td>
<td>3</td>
<td>HIS 101, 102, 111, 121, 122, 203, 204, 231, 232, 233, 253, 254</td>
</tr>
</tbody>
</table>

**Literature**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 112L, 114L, or FLET 100L</td>
<td>3</td>
<td>AS/ENG 125, 236, 237, 241–246, 251–256, 267, or 268</td>
</tr>
</tbody>
</table>

**Philosophy and Ethics**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
</table>

**Natural Science and Technology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Behavior</td>
<td>3 AS</td>
<td></td>
</tr>
</tbody>
</table>

**The Impact of Technology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
</table>

**Entrance Writing Sample Placement Test:**

**Entrance Math Placement Test:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade/credit</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 211 Calculus I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Math 212 Calculus II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Math 312 Calculus III</td>
<td>4 MATH 285</td>
<td></td>
</tr>
<tr>
<td>Math 307 Differential Equations</td>
<td>3</td>
<td>MATH 280</td>
</tr>
<tr>
<td>Math 316 or 401 or 421 or 422</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chem 121N/122N Chemistry I</td>
<td>4</td>
<td>CHM 111 or 113</td>
</tr>
<tr>
<td>Chem 123N/124N Chemistry II</td>
<td>4</td>
<td>CHM 112 or 114</td>
</tr>
<tr>
<td>CS 150 Intro to Programming</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Phys 231N University Physics I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Phys 232N University Physics II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Phys 303 Laboratory</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 323 Modern Physics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 355 Math Methods</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 319 Analytical Mechanics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 413 Methods of Exp. Physics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 425 Electromagnetism I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 452 Intro. Quantum Mechanics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 454 Thermal Physics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>One course from: Phys 420, 453 or 456</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Phys 499W or 498W/490W Thesis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Approved Physics Seminar</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Two courses from: Phys 311, 313, 322, 350, 411, 415, 416, 417 with at least three credits 4xx</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Physics Course Requirements**

- Math 211 Calculus I
- Math 212 Calculus II
- Math 312 Calculus III
- Math 307 Differential Equations
- Math 316 or 401 or 421 or 422
- Chem 121N/122N Chemistry I
- Chem 123N/124N Chemistry II
- CS 150 Intro to Programming
- Phys 231N University Physics I
- Phys 232N University Physics II
- Phys 303 Laboratory
- Phys 323 Modern Physics
- Phys 355 Math Methods
- Phys 319 Analytical Mechanics
- Phys 413 Methods of Exp. Physics
- Phys 425 Electromagnetism I
- Phys 452 Intro. Quantum Mechanics
- Phys 454 Thermal Physics
- One course from: Phys 420, 453 or 456
- Phys 499W or 498W/490W Thesis

**Upper Division General Education**

Satisfied by any University approved 2nd major, minor, cluster, or two upper-division courses (6 credits) outside of the College of Sciences, and not required by the major (Option D).

**120 Hours and a 2.0 Grade Point Average in the Major, Minor, and Overall Are Needed to Graduate.**

**Additional Graduation Requirements:**

- Application for Graduation
- Passage of Physics Exit Exam
- Senior Assessment

**Physics Minor:**

- Math 319
- Phys 323
- 6 additional credits at 300-400 level

**Edited:** July 19, 2012