# DEGREE PLANNING GUIDE: 2016-17

## CHEMISTRY—B.S. (ACS Certified)

<table>
<thead>
<tr>
<th>First year (&lt;28 credits)</th>
<th>Sophomore (28-59 credits)</th>
<th>Junior (60-91 credits)</th>
<th>Senior (92+ credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Semester 1</strong></td>
<td><strong>Semester 1</strong></td>
<td><strong>Semester 1</strong></td>
<td><strong>Semester 1</strong></td>
</tr>
<tr>
<td>MATH 113</td>
<td>CHEM 201 (Fall only)</td>
<td>CHEM 300 (if not take First Year)</td>
<td>CHEM 483 (0 credit)</td>
</tr>
<tr>
<td>CHEM 111 or 115</td>
<td>PHYS 111</td>
<td>or CHEM elective *</td>
<td>CHEM 400 (Fall only)</td>
</tr>
<tr>
<td><strong>Semester 2</strong></td>
<td><strong>Semester 2</strong></td>
<td><strong>Semester 2</strong></td>
<td><strong>Semester 2</strong></td>
</tr>
<tr>
<td>MATH 114</td>
<td>CHEM 202 (Spring only)</td>
<td>CHEM 320 (Spring only)</td>
<td>CHEM 484</td>
</tr>
<tr>
<td>CHEM 112 (if 111 taken in fall)</td>
<td>PHYS 112</td>
<td>CHEM 332 (Spring only)</td>
<td>CHEM 491 (1 credit)</td>
</tr>
<tr>
<td>(or CHEM 300 if CHEM 115 was taken in fall)</td>
<td></td>
<td>CHEM 482 (0 credit)</td>
<td>CHEM 340 (Spring only)</td>
</tr>
</tbody>
</table>

### Requirements for Degree

#### Program Core Courses
- CHEM 111 General Chemistry I or CHEM 115
- CHEM 112 General Chemistry II
- CHEM 201 Organic Chemistry I
- CHEM 202 Organic Chemistry II
- CHEM 300 Quantitative Analysis
- CHEM 320 Instrumental Analysis
- CHEM 331 Chemical Thermodynamics & Reaction Dynamics
- CHEM 332 Quantum Chemistry & Molecular Spectroscopy
- CHEM 340 Organic Spectroscopy (2 credits)
- CHEM 400 Advanced Inorganic Chemistry (332 is prerequisite)
- CHEM 440 Biochemistry I
- CHEM 481-484 Seminar (2 credits total)
- CHEM 491 Research (2 credits) (or a summer research project sponsored by the department)

#### Allied Requirements
- MATH 113 Calculus I
- MATH 114 Calculus II
- PHYS 111 Introduction to Classical Physics I
- PHYS 112 Introduction to Classical Physics II

#### Special Notes

*Plus 4 credits from:
- CHEM 250 Organometallic Chemistry (2 credits)
- CHEM 295 Topics (2-credit)
- CHEM 420 Bioanalytical and Forensic Chemistry (2 credits)
- CHEM 430 Polymer Chemistry (2 credits)
- CHEM 442 Biochemistry II (required for a B.S. in Chemistry with a biochemistry concentration, plus a research project in biochemistry)
- CHEM 487, 488 Topics (2-credit course)
- CHEM 491 Research (2 or 4 credits)
All chemistry majors are advised to take 111-112 and MATH 113-114 during the freshman year if at all possible. Then 201-202 and PHYS 111-112 (Introductory Physics) should be taken during the sophomore year. (PHYS 109-110 is not acceptable for the CHEM major.) Other sequences of math and physics are much less desirable. If necessary, MATH 113 can be started in the second semester of freshman year; then MATH 114 can be taken concurrently with PHYS 111 during first semester sophomore year.

Strongly recommended:

MATH an additional course numbered 200 or above