The Department of Chemistry offers the Bachelor of Science degree for students who intend to become professional chemists or do graduate work in chemistry or a closely related discipline. There are two options in the B.S. program: a traditional version covering all the major areas of chemistry, and an option that emphasizes biochemistry. Both degree options are certified by the American Chemical Society.

122 hours

Any student earning a Bachelor of Science (BS) degree must complete a minimum of 60 hours in natural, physical, mathematical, and computer science. See the complete description of College requirements for a Bachelor of Science degree, including a specific listing of courses applicable to the 60-hour requirement, on pages 103-104.

University Studies Program Requirements

I. Math (completed by Premajor Requirement)
II. Foreign Language* (placement exam recommended) .................... 0-8
III. Inference–Logic (completed by Premajor Requirement) ............................................. 0-4
IV. Written Communication ........................................................................... 0-4
VI. Natural Sciences (completed by Premajor Requirements)
VII. Social Sciences .................................................................................. 6
VIII. Humanities ......................................................................................... 6
IX. Cross-Cultural (choose a Humanities course) .................................. 3
X. Electives (choose a Social Science course) ............................................. 3

USP hours: ......................................................................................... 18-30

Graduation Writing Requirement

After attaining sophomore status, students must complete a Graduation Writing Requirement course. See “University Writing Requirement” on page 72 of this Bulletin.

Graduation Writing Requirement Hours: ............................................. 3

College Requirements

I. Foreign Language (placement exam recommended) .................... 0-6
II. Disciplinary Requirements
   a. Natural Science (completed by Major Requirements) ............ 0-6
   b. Social Science (completed by USP Elective Requirement) .. 0-6
   c. Humanities (completed by USP Cross-Cultural Requirement) 0-6
III. Laborotary or Field Work (completed by Premajor Requirement)
IV. Electives ......................................................................................... 6-12

College Requirement hours: ..................................................................... 6-12

Premajor Requirements

MA 113 Calculus I (MA 113 or MT 175) .................................................... 4
MA 114 Calculus II (MA 114 or MT 185) ............................................. 4
CHE 105 General College Chemistry I (CHE 105) .......................... 3
CHE 111 Laboratory to Accompany General Chemistry I
   (CHM 105 preferred; or CHE 115 which fulfills CHE 111 and 113) 1
CHE 113 Laboratory to Accompany General Chemistry II
   (CHM 107 preferred; or CHE 115 which fulfills CHE 111 and 113) 2

Electives

Choose electives to lead to the minimum total of 122 hours required for graduation.

Total Minimum Hours

Required for Degree ........................................................................... 122
## Chemistry (B.S.) – Biochemistry Option

### Freshman Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHE 105 General College Chemistry I (CHE 105)</td>
<td>3</td>
</tr>
<tr>
<td>CHE 111 Laboratory to Accompany General Chemistry I (CHM 105 preferred; or CHE 115 which fulfills CHE 111 and 113)</td>
<td>1</td>
</tr>
<tr>
<td>MA 113 Calculus I (MA 113 or MT 175)</td>
<td>4</td>
</tr>
<tr>
<td>ENG 104 Writing: An Accelerated Foundational Course</td>
<td>4</td>
</tr>
<tr>
<td>University Studies</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHE 107 General College Chemistry II (CHE 107)</td>
<td>3</td>
</tr>
<tr>
<td>CHE 113 Laboratory to Accompany General Chemistry II (CHM 107 preferred; or CHE 115 which fulfills CHE 111 and 113)</td>
<td>2</td>
</tr>
<tr>
<td>MA 114 Calculus II (MA 114 or MT 185)</td>
<td>4</td>
</tr>
<tr>
<td>BIO 150 Principles of Biology I (BIO 150)</td>
<td>3</td>
</tr>
<tr>
<td>BIO 151 Principles of Biology Laboratory I (BIO 151)</td>
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</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHE 230 Organic Chemistry I (CHE 230)</td>
<td>3</td>
</tr>
<tr>
<td>BIO 152 Principles of Biology II (BIO 152)</td>
<td>3</td>
</tr>
<tr>
<td>BIO 153 Principles of Biology Laboratory II (BIO 153)</td>
<td>2</td>
</tr>
<tr>
<td>MA 213 Calculus III (MA 213)</td>
<td>4</td>
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<tr>
<td>PHY 231 General University Physics (PHY 231)</td>
<td>4</td>
</tr>
<tr>
<td>PHY 241 General University Physics Laboratory (PHY 241)</td>
<td>1</td>
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<tr>
<td><strong>Second Semester</strong></td>
<td></td>
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<tr>
<td>CHE 231 Organic Chemistry Laboratory I (CHE 231)</td>
<td>2</td>
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<tr>
<td>CHE 232 Organic Chemistry II (CHE 232)</td>
<td>3</td>
</tr>
<tr>
<td>CHE 226 Analytical Chemistry (CHE 226)</td>
<td>3</td>
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<tr>
<td>PHY 231 General University Physics (PHY 231)</td>
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<tr>
<td>PHY 241 General University Physics Laboratory (PHY 241)</td>
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<tr>
<td>ENG 2XX Writing Intensive Course</td>
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</table>

### Junior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td><em>CHE 440G Introductory Physical Chemistry</em></td>
<td>4</td>
</tr>
<tr>
<td>CHE 522 Instrumental Analysis</td>
<td>4</td>
</tr>
</tbody>
</table>
| or
| CHE 532 Spectrometric Identification of Organic Compounds | 2 |
| CHE 550 Biological Chemistry I | 3 |
| **BIO 308 General Microbiology** or
| BIO 315 Introduction to Cell Biology | 3 |
| University Studies | 3 |
| **Second Semester** | |
| CHE 533 Qualitative Organic Analysis Laboratory (if CHE 532 taken) | 2 |
| CHE 552 Biological Chemistry II | 3 |
| CHE 554 Biological Chemistry Laboratory | 2 |
| University Studies | 6 |
| Foreign Language*** | 4 |

### Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
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<tr>
<td>CHE 450G Practical Inorganic Chemistry</td>
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<td>Major Field Option</td>
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<tr>
<td>CHE 572 Seminar</td>
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<tr>
<td>University Studies</td>
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<tr>
<td>Foreign Language***</td>
<td>4</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHE 441G Physical Chemistry Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>Major Field Option</td>
<td>2</td>
</tr>
<tr>
<td>CHE 572 Seminar</td>
<td>1</td>
</tr>
<tr>
<td>Foreign Language***</td>
<td>3</td>
</tr>
<tr>
<td>Electives (A&amp;S)</td>
<td>6</td>
</tr>
</tbody>
</table>

*CHE 442G may be substituted for CHE 440G.
**BIO 304 may replace BIO 308 or BIO 315.
***Any language may be used to satisfy the USP and College Foreign Language requirements – German is recommended.

### Certification Requirements

The B.S. degree is certified by the American Chemical Society.