# Bachelor of Arts in Chemistry - Chemistry Option

Requirements (83-85 units)

Total units required for graduation: 180

## Requirements for the B.A. in Chemistry - Chemistry Option (Program Code: CHEM)

### Lower-division requirements (42-44)

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 215</td>
<td>General Chemistry I: Atomic Structure and Chemical Bonding</td>
<td>6</td>
</tr>
<tr>
<td>CHEM 216</td>
<td>General Chemistry II: Principles of Chemical Reactions</td>
<td>6</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Basic Concepts of Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 213</td>
<td>Calculus III</td>
<td>4</td>
</tr>
</tbody>
</table>

One year of introductory physics. CSUSB physics sequences that satisfy this requirement are:

- **Sequence A:**
  - PHYS 121 Basic Concepts of Physics I
  - PHYS 122 Basic Concepts of Physics II
  - PHYS 123 Basic Concepts of Physics III

- **Sequence B:**
  - PHYS 221 General Physics I
  - PHYS 222 General Physics II
  - PHYS 223 General Physics III

### Biological science

- BIOL 100 Topics in Biology | 5
- or BIOL 200 Biology of the Cell | 5

### Upper-division requirements (41)

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 321</td>
<td>Principles of Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 322</td>
<td>Principles of Organic Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 323</td>
<td>Principles of Organic Chemistry III</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: Subject to departmental approval the organic chemistry requirement may be met with the following:

- CHEM 221A Organic Chemistry I Lecture
- CHEM 221B Organic Chemistry I Lab
- CHEM 222A Organic Chemistry II Lecture
- CHEM 222B Organic Chemistry II Lab
- CHEM 223A Organic Chemistry III Lecture
- CHEM 223B Organic Chemistry III Lab
- CHEM 421 Intermediate Organic Chemistry
- CHEM 345 Modern Quantitative Analysis | 5
- CHEM 455 Physical Chemistry I           | 5
- CHEM 456 Physical Chemistry II          | 5
- CHEM 475 Inorganic Chemistry            | 5
- CHEM 590A Chemistry Seminar I           | 1
- CHEM 590B Chemistry Seminar II          | 1

Total Units: 83-85