### BS CHEMISTRY

#### 2020-2021 updated 01.21.2020

#### Units Required 180

![Cal Poly Logo](image)

**Note:** This is a snapshot of the curriculum as originally published in the catalog. The Degree Progress Report (DPR) reflects updates to the published catalog. The DPR will be used to award your degree and calculate your EAP.

---

### MAJOR COURSES (77-80)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Grade</th>
<th>Grd Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 124</td>
<td>Gen Chem I for PSE (B1&amp;B3)</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 125</td>
<td>Gen Chemistry II for PSE</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 126</td>
<td>Gen Chemistry III for PSE</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 203</td>
<td>Undergraduate Seminar I</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 216</td>
<td>Org Chemistry I</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 217</td>
<td>Org Chemistry II</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 218</td>
<td>Org Chemistry III</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 221</td>
<td>Organic Chem Lab II</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 303</td>
<td>Undergraduate Seminar II</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 342</td>
<td>Org Chem Lab III</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 331</td>
<td>Quantitative Analysis</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 351</td>
<td>Physical Chemistry I</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 352</td>
<td>Physical Chemistry II</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 353</td>
<td>Physical Chemistry III</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 354</td>
<td>Physical Chem Lab</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 357</td>
<td>Physical Chem II Lab</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 371</td>
<td>Biochemical Principles</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 403</td>
<td>Ugrd Sem. III: Sr Proj</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 439</td>
<td>Instrumental Analysis</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 481</td>
<td>Inorganic Chemistry</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 484</td>
<td>Inorganic Chemistry Lab</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select 15</td>
<td>units of Advanced Chemistry Electives</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>declare and follow the 18-unit Polymers &amp; Coatings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentration</td>
<td>(see reverse)</td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SUPPORT COURSES (38-39)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Grade</th>
<th>Grd Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 161</td>
<td>Intro to Cell &amp; Molecular Biol (B2&amp;B3)</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 141</td>
<td>Calculus I (B4)</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 142</td>
<td>Calculus II (GE Elective)</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 143</td>
<td>Calculus III</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 241</td>
<td>Calculus IV</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one course from the following:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSC 232, 234, 235; MATH 206, 244; STAT 218, 312</td>
<td></td>
<td>3-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 141</td>
<td>General Physics IA</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 132</td>
<td>General Physics II</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 133</td>
<td>General Physics III</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics elective (200-level and above)</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GENERAL EDUCATION (GE)

- 72 units required, 16 of which are specified in Major/Support
- Minimum of 12 units required at the 300 level.

**Area A English Language Comm & Critical Thinking**
- A1 Oral Communication 
- A2 Written Communication
- A3 Critical Thinking

**Area B Scientific Inquiry & Quantitative Reasoning**
- B1 Physical Science
- B2 Life Science
- B3 Laboratory Activity
- B4 Math/Quant. Reasoning

**Area C Arts and Humanities**
- Lower-Division Area C courses must come from 3 different subject prefixes.
- Upper-Division B courses must come from 2 different subject prefixes.

**Area D Social Sciences**
- D1 American Inst. (Title 5/40404)

**Courses in D2 must come from 2 different subject prefixes**
- D2 Lower-Division
- D3 Lower-Division
- Upper-Division D

**Area E Lifelong Learning and Self-Development**
- Lower-Division E

### GE Electives in Areas C or D

Select a course from Area C or D; may be lower- or upper-division
- GE Elective (GE Area C or D)
- GE Elective (4 units of Area B in Support)

### FREE ELECTIVES

1. Required in Major/Support; also satisfies General Education (GE) requirement.
2. Students should take CHEM 331 as soon as possible after completing CHEM 126.
3. Consultation with advisor is recommended prior to selecting Advanced Electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.
4. No more than 6 units may apply to Advanced Chemistry Electives.
5. No more than 2 units may apply to Advanced Chemistry Electives.
6. If a GE course is used to satisfy a Major or Support requirement, additional Free Electives units may be needed to complete the total units required for the degree.
7. C1, C2, and C elective must come from three different subject prefixes.
8. Second D2 must be a different subject prefix from the first D2.
## ADVANCED CHEMISTRY ELECTIVES or POLYMERS AND COATINGS CONCENTRATION

### ADVANCED CHEMISTRY ELECTIVES
Select 15 units of Advanced Chemistry Electives or declare and follow the 18-unit Polymers & Coatings Concentration

- BIO/CHEM 308$^4$ or CHEM 349$^6$ or ENVE 324$^6$ or SCM 335$^6$ or SCM 360$^6$
- BIO/CHEM 441 Bioinformatics Applications
- BIO/CHEM 475 Molecular Biology Laboratory
- CHEM 252 Laboratory Glassblowing
- CHEM 302 Marine Chemistry
- CHEM 341 Environmental Chemistry: Water Pollution
- CHEM 372 Metabolism
- CHEM 373 Molecular Biology
- CHEM 377 Chemistry of Drugs and Poisons
- CHEM 401 Advanced Undergraduate Research$^4$
- CHEM 405 Advanced Physical Chemistry
- CHEM 414 Advanced Organic Chemistry - Mechanisms
- CHEM 419 Bioorganic Chemistry
- CHEM 420 Advanced Organic Chemistry - Synthesis
- CHEM 428 Nutritional Biochemistry
- CHEM 444 Polymers & Coatings I
- CHEM 445 Polymers & Coatings II
- CHEM/MATE 446 Surface Chemistry of Materials
- CHEM 447 Polymers and Coatings Laboratory I
- CHEM 448 Polymers and Coatings Laboratory II
- CHEM 449 Polymers and Coatings Internship
- CHEM 450 Polymers and Coatings III
- CHEM 451 Polymers and Coatings Laboratory III
- CHEM 454 Functional Polymeric Materials
- CHEM 458 Instrumental Organic Qualitative Analysis
- CHEM 463 Honors Research
- CHEM 465 College Teaching Practicum
- CHEM 466 Learning Assistant Seminar
- CHEM 470 Selected Advanced Topics
- CHEM 474 Protein Techniques Laboratory
- CHEM 477 Biochemical Pharmacology
- CHEM 485 Cooperative Education Experience$^5$
- CHEM 495 Cooperative Education Experience$^6$
- SCM 302/ENGR 322 The Learn By Doing Lab Teaching Practicum

### POLYMERS AND COATINGS CONCENTRATION

- CHEM 444 Polymers & Coatings I ……………….. 3
- CHEM 445 Polymers & Coatings II ……………….. 3
- CHEM 446 Surface Chemistry of Materials ……….. 3
- CHEM 447 Polymers and Coatings Laboratory I ………. 2
- CHEM 448 Polymers and Coatings Laboratory II ………. 2
- CHEM 450 Polymers and Coatings III ……………….. 3
- Select one course from the following: ……………….. 2
  - CHEM 449 Polymers and Coatings Internship
  - CHEM 451 Polymers and Coatings Laboratory III

Total Units: 18