

Minor in Chemistry

23 units

Requirements

- The minimum prerequisites for the chemistry minor are a *C-* in CHEM 151 and a *B-* in MATH 110 or equivalent (e.g., a score of 65 on ALEKS).
- Students must complete all prerequisites for a BIOC, BIOL, or CHEM course with a *C-* or better before taking the course (except as noted in the course description).
- Students must maintain a minimum cumulative GPA of 2.0 in all biology, chemistry, biochemistry, math, and physics courses required for the minor.
- Students must complete each course required for the minor with a *C-* or higher for the course to meet a degree requirement in the Department of Biology and Chemistry.
- Any single course within the minor can be taken only two times at APU; students will be dismissed from the minor after two unsuccessful (below *C-*) attempts in a single required course.
- Only two courses total within the minor can be repeated; students will be dismissed from the minor after unsuccessful (below *C-*) attempts in any three required courses.

| Code | Title | Units |
|--|--|-----------|
| Lower-Division Chemistry Requirements | | |
| CHEM 151 & CHEM 152 | General Chemistry I and General Chemistry II ^{1, 2} | 8 |
| CHEM 251 & CHEM 252 | Organic Chemistry: Theory I and Organic Chemistry: Theory II | 6 |
| CHEM 261 & CHEM 262 | Organic Chemistry - Lab and Organic Chemistry - Lab | 2 |
| Upper-Division Chemistry Electives | | |
| Choose 7 elective units from the following; these may not include units used to fulfill requirements of the student's major. | | |
| BIOC 360 or BIOC 270 or BIOC 370 | Principles of Biochemistry Biomolecular Chemistry Biomolecular Metabolism | |
| BIOC 390 | Physical Biochemistry | |
| CHEM 300 & CHEM 310 | Quantitative Chemical Analysis - Theory and Quantitative Chemical Analysis - Laboratory | |
| CHEM 320 & CHEM 330 | Instrumental Analysis: Theory and Instrumental Analysis - Lab ³ | |
| CHEM 311 | Teaching and Learning in STEM ⁴ | |
| CHEM 312 | STEM Education Research Seminar ⁴ | |
| CHEM 313 | STEM Teaching Practicum ⁴ | |
| CHEM 394 | Directed Research Internship ^{4, 5} | |
| CHEM 395 | Chemical Science Internship ^{4, 6} | |
| CHEM 401 | Physical Chemistry I | |
| CHEM 402 | Physical Chemistry II | |
| CHEM 411 | Physical Chemistry I Lab | |
| CHEM 412 | Physical Chemistry II Lab | |
| CHEM 451 | Advanced Organic Chemistry | |
| CHEM 461 | Inorganic Chemistry | |
| CHEM 495 | Advanced Topics in Chemistry | |
| Total Units | | 23 |

¹ CHEM 151 meets the General Education Natural Sciences requirement.

² May be waived with the appropriate Advanced Placement test scores.

³ CHEM 320 meets the General Education Integrative and Applied Learning requirement.

⁴ Up to 3 units combined of CHEM 311, CHEM 312, CHEM 313, CHEM 394, and CHEM 395 may count toward minor elective units.

⁵ All research done within CHEM 394 must be done primarily with a member of the chemistry faculty.

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⁶ CHEM 395 must be approved by the course instructor for credit toward the chemistry minor.