CalPolyPomona

Name:

Plan: **Chemistry, B.S.**

SubPlan/Option: **Biochemistry**

Min. Units Required: **120 units**

**2021-2022 University Catalog**
**Degree Curriculum Sheet**

## Major Required — 48 units

CHM1210 - General Chemistry I (3) (B1)
CHM1210L - General Chemistry Laboratory I (1) (B3)
CHM1220 - General Chemistry II (3) (B1)
CHM1220L - General Chemistry Laboratory II (1) (B3)
CHM2210 - Quantitative Analysis (2)
CHM2210L - Quantitative Analysis Laboratory (2)
CHM2910A - Chemical Communication Activity (1)
CHM3140 - Organic Chemistry I (4)
CHM3140L - Organic Chemistry Laboratory I (1)
CHM3150 - Organic Chemistry II (3)
CHM3150L - Organic Chemistry Laboratory II (1)
CHM3270 - Biochemistry I (3)
CHM3270L - Biochemistry Laboratory I (1)
CHM3420 - Spectroscopic Methods (1)
CHM3420L - Spectroscopic Methods Laboratory (1)
CHM3430 - Separation Methods (1)
CHM3430L - Separation Methods Laboratory (1)
CHM3520L - Physical Chemistry Laboratory (2)
MAT1140 - Calculus I (4) (B4)
MAT1150 - Calculus II (4) (B4)
PHY1510 - Introduction to Newtonian Mechanics (3) (B1)
PHY1510L - Newtonian Mechanics Laboratory (1) (B3)
PHY1520 - Introduction to Electromagnetism and Circuits (3)
PHY1520L - Introductory Laboratory on Electromagnetism and Circuits (1)

## Subplan/Option Required — 24-25 units

BIO1210 - Foundations of Biology: Energy, Matter, and Information (3) (B2)
BIO1210L - Foundations of Biology: Energy, Matter, and Information Laboratory (1) (B3)
BIO1220 - Foundations of Biology: Evolution, Ecology, and Biodiversity (3)
BIO1220L - Foundations of Biology: Evolution, Ecology, and Biodiversity Laboratory (1)

BIO2060 - Basic Microbiology (3) ***and***
BIO2060L - Basic Microbiology Laboratory (1)
***OR***
BIO2400 - Genetics (3)

CHM3040 - Elements of Physical Chemistry I (3)
CHM3050 - Elements of Physical Chemistry II (3)
CHM3280 - Biochemistry II (3)
CHM3280L - Biochemistry Laboratory II (1)
CHM4530 - Informational Biomolecules and Recombinant DNA (3)

## Subplan/Option Electives — 8-9 units

Select at least one course from Option Electives and one BIO course.

### Option Electives

CHM3310 - Clinical Chemistry (2)
CHM3310L - Clinical Chemistry Laboratory (1)
CHM4510 - Enzymology (3)
CHM4510L - Enzymology Laboratory (1)
CHM4520 - Advanced Biomolecular Structure (3)
CHM4540 - Advanced Metabolism (3)
CHM4610 - Senior Project I (2) *

### Suggested Chemistry (CHM) Electives

CHM3440 - Electroanalytical Methods (1)
CHM3440L - Electroanalytical Methods Laboratory (1)
CHM4410 - Internship in Chemistry (1-2)
CHM4500 - Bioanalytical Chemistry (3)
CHM4500L - Bioanalytical Chemistry Laboratory (1)
CHM4620 - Senior Project II (2) *
CHM4630 - Research Student Seminar (1) *
CHM 3000/4000 level: Additional course from Option Electives (1-4)

### Suggested Biology (BIO) Electives

BIO3620 - Applied Microbiology (2)
BIO3620L - Applied Microbiology Laboratory (1)
BIO3640 - Food Microbiology (2)
BIO3640L - Food Microbiology Laboratory (1)
BIO4020 - Developmental Biology (3)[1]
BIO4020L - Developmental Biology Laboratory (1)[1]
BIO4030 - Human Genetics (3)[1]
BIO4040 - Advanced Genetics (3)
BIO4190 - Neuroscience I: Cell and Molecular Processes (3)[1]
BIO4190L - Neuroscience I: Cell and Molecular Processes Laboratory (1)[1]
BIO4300 - Concepts of Molecular Biology (3)[1]
BIO4320 - Molecular Biology Techniques (3)
BIO4320L - Molecular Biology Techniques Laboratory (1)
BIO4360 - Recombinant DNA and Protein Technology (3)
BIO4360L - Recombinant DNA and Protein Technology Laboratory (1)
BIO4380 - Bioinformatics (2)
BIO4380L - Bioinformatics Laboratory (2)
BIO4390 - Cancer Cell Biology (3)[1]
BIO4400 - Stem Cell Biology (3)[1]
BIO4400L - Stem Cell Biology Laboratory (1)[1]
BIO4450 - Physiology I: Cells (3)[1]
BIO4450L - Physiology I: Cells Laboratory (1)[1]
BIO4480 - Plant Physiology (3) 2
BIO4480L - Plant Physiology Laboratory (1) 2
BIO4540 - Plant Genetics (3)
BIO4635 - Medical Microbiology (3)
BIO4660 - Microbial Physiology (3)

### Note(s):

*Students who do senior project should take CHM 4610, CHM 4620, and CHM 4630 to complete requirement. 1 BIO 3220 - Cell and Molecular Biology , is a prerequisite. 2 BIO 2050 - Form and Function in Plants / BIO 2050L - Form and Function in Plants Laboratory , is a prerequisite.

## General Education Requirements — 48 Units

Students should view their Degree Progress Report (DPR) for information regarding their General Education requirements. Unless specific GE courses are required for their major, please refer to the list of approved courses in the General Education Program in the University Catalog, catalog.cpp.edu. When viewing the catalog, students should select the catalog year associated with the GE requirements listed in their Degree Progress Report.

**Area A. English Language Communication and Critical Thinking (9 units)**
*At least 3 units from each sub-area*
1. Oral Communication
2. Written Communication
3. Critical Thinking

**Area B. Scientific Inquiry and Quantitative Reasoning (12 units)**
*At least 3 units from B1, B2, B4, and B5 including 1 unit of lab from B1 or B2 to fulfill B3*
1. Physical Sciences
2. Life Sciences
3. Laboratory Activity
4. Mathematics/Quantitative Reasoning
5. Science and Technology Synthesis

**Area C. Arts and Humanities (12 units)**
*At least 3 units from each sub-area and 3 additional units from sub-areas 1 and/or 2*
1. Visual and Performing Arts
2. Literature, Modern Languages, Philosophy and Civilization
3. Arts and Humanities Synthesis

**Area D. Social Sciences (9 units)**
*At least 3 units from each sub-area*
1. U.S. History and American Ideals
2. U.S. Constitution and California Government
4. Social Science Synthesis

**Area E. Lifelong Learning and Self-Development (3 units)**
**Area F. Ethnic Studies (3 units)**

## Interdisciplinary General Education — 18 Units

An alternate pattern for partial fulfillment of GE Areas A, C, and D available for students is the Interdisciplinary General Education (IGE) program. Students should see an advisor for specific GE coursework required by their major. Please refer to the University Catalog General Education Program section for additional information.

***How IGE fulfills General Education Requirements:***

| *Year* | *Completion of IGE Courses* | *Satisfies GE Requirements* |
|---|---|---|
| *First* | *IGE 1100, IGE 1200* | *A2 and C2* |
| *Second/Third* | *IGE 2150, IGE 2250* | *D1 and C2* |
| | *IGE 2350* | *C1* |
| | *IGE 3100* | *C3 or D4* |

## American Institutions — 6 Units

Courses that satisfy this requirement may also satisfy GE Area D1 and D2.

## Graduation Writing Test

All persons who receive undergraduate degrees from Cal Poly Pomona must pass the Graduation Writing Test (GWT). The test must be taken by the semester following completion of 60 units for undergraduates.