CAL POLY

BS BIOCHEMISTRY
2022-2026

This document displays only your course requirements at the time of publication of the catalog. You must use your Degree Progress Report to track all graduation requirements.

Note: No Major, Support or Concentration courses may be selected as credit/no credit.

MAJOR COURSES		
CHEM 124	Gen Chem/Phys Sci & Engr I (B1 & B3) [1]	4
CHEM 125	Gen Chem/Phys Sci & Engr II	4
CHEM 126	Gen Chem/Phys Sci & Engr III	4
CHEM 203	Undergraduate Seminar I	1
CHEM 216	Organic Chemistry I	5
CHEM 217	Organic Chemistry II	3
CHEM 218	Organic Chemistry III	3
CHEM 221	Organic Chemistry Lab II	2
CHEM 303	Undergraduate Seminar II	1
CHEM 324	Organic Chemistry Lab III	2
CHEM 331	Quantitative Analysis [2]	5
CHEM 351	Physical Chemistry I	3
CHEM 352	Physical Chemistry II	3
CHEM 353	Physical Chemistry III	3
CHEM 356	Physical Chemistry Lab (GWR)	2
CHEM 369	Biochem Principles (Upper-Division B)[1]	5
CHEM 372	Metabolism	4
CHEM 373	Molecular Biology	3
CHEM 403	Undergrad Seminar III: Senior Project	1
CHEM/BIO 475	Molecular Biology Laboratory	3
Select one from the following:		3
BIO 476	Gene Expression Laboratory	
CHEM 474	Protein Techniques Laboratory	
Advanced Chem Elect[3] (12 units) **OR**		12/18
Polymers & Coatings (18 units)		
Total Major Units		**76/82**

SUPPORT COURSES		
BIO 161	Intro to Cell/Molecular Bio (B2 & B3) [1]	4
Select one from the following:		3-5
BIO 452	Cell Biology	
CHEM 432	Physical Biochemistry	
MCRO 224	General Microbiology I	
MATH 141	Calculus I (B4) [1]	4
MATH 142	Calculus II (GE Electives) [1]	4
MATH 143	Calculus III	4
PHYS 141	General Physics I	4
PHYS 142	General Physics II	4
PHYS 143	General Physics III	4
Total Support Units		**31-33**

GENERAL EDUCATION		
Area A	**Engl. Language Communication & Critical Thinking**	
A1	Oral Communication	4
A2	Written Communication	4
A3	Critical Thinking	4
Area B	**Scientific Inquiry and Quantitative Reasoning**	
B1	Physical Science (4 units in Major) [1]	0
B2	Life Science (4 units in Support) [1]	0
B3	One lab in either a B1 or B2 course (in Major)	
B4	Math/Quant. Reasoning (4 units in Support) [1]	0
Upper-Division B (4 units in Major)[1]		0
Area C	**Arts and Humanities**	
Select lower-division courses from 3 different prefixes.		
C1	Arts	4
C2	Humanities	4
Lower-Division C Elective - Select from either C1 or C2		4
Upper-Division C		4
Area D	**Social Sciences**	
Select courses from at least 2 different prefixes.		
D1	American Institutions (Title 5/Section 40404)	4
D2	Lower-Division D	4
Upper-Division D		4
Area E	**Lifelong Learning and Self-Development**	
Lower-Division E		4
Area F	**Ethnic Studies**	
Lower-Division F		4
GE Electives in Areas C and D		
Select lower- or upper-division courses from 2 different areas.		
GE Electives (4 units of Area B in Support) [1]		0
GE Electives (Area C or D)		4
Total General Education units		**52**
FREE ELECTIVES		**13-21**
TOTAL DEGREE UNITS		**180**

FOOTNOTES

[1] Required in Major or 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 Adv. Chem. Elect.; bear in mind your selections may impact pursuit of post-bacc. 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 General Education (GE) course is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the the degree.

Advanced Chemistry Electives (15 units) [3]

One course must be a lecture, and at least 2 must be from List A.

List A

CHEM 302	Marine Chemistry
CHEM 341	Environmental Chemistry: Water Pollution
CHEM 357	Physical Chemistry III Lab
CHEM 377	Chemistry of Drugs and Poisons
CHEM 401	Advanced Undergraduate Research [4]
CHEM 405	Advanced Physical Chemistry
CHEM 414	Advanced Organic Chemistry -
CHEM 420	Advanced Organic Chemistry - Synthesis
CHEM 428	Nutritional Biochemistry
CHEM 432	Physical Biochemistry
CHEM 439	Instrumental Analysis
CHEM 441	Bioinformatics Applications
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	Adv. Organic Chemistry - Spetroscopy
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 481	Inorganic Chemistry
CHEM 484	Inorganic Chemistry Laboratory
CHEM 485	Cooperative Education Experience [5]
CHEM 495	Cooperative Education Experience [5]
SCM 302/ ENGR 322	Learn By Doing Lab Teaching Practicum

List B

BIO/CHEM 308	Genetic Engineering Technology
or CHEM 349	Chemical and Biological Warfare
or ENVE 324	Introduction to Air Pollution
or SCM 360	Selected Env. Issues of Calif's Central Coast
BIO 351	Principles of Genetics
BIO 361	Principles of Animal Physiology
BIO 405	Developmental Biology
BIO 406	Adv Anatomy & Physiology: Neuroscience
BIO 407	Adv Anatomy & Physiology: Endocrinology
BIO 408	Adv Anatomy & Physiology: Cardiorespiratory
BIO 409	Adv Anatomy & Physio.: Muscle & Locomotion
BIO 410	Functional Histology
BIO 426	Immunology
BIO 452	Cell Biology
MCRO 402	General Virology
MCRO 423	Medical Microbiology
MCRO 424	Microbial Physiology
STAT 312	Statistical Methods for Engineers

Polymers and Coatings Concentration (18 units)

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 from the following:		2
CHEM 449	Polymers and Coatings Internship	
CHEM 451	Polymers and Coatings Laboratory III	
Total Units		**18**