

BS BIOCHEMISTRY

2007-09 Cal Poly Catalog

Chemistry & Biochemistry Department

Faculty Offices East Bldg. (25), Room 125B

(805) 756-2693

- 60 units upper division
- 2.0 GPA
- GWR
- USCP

* = Satisfies General Education requirement

Course sequencing: See flowcharts at

www.calpoly.edu/~cosamac

MAJOR COURSES

CHEM 127 General Chemistry (B3 & B4)*	4
CHEM 128 General Chemistry	4
CHEM 129 General Chemistry	4
CHEM 316 Organic Chemistry I	5
CHEM 317 Organic Chemistry II	5
CHEM 318 Organic Chemistry III	3
CHEM 319 Advanced Organic Chemistry Lab	2
¹ CHEM 331 Quantitative Analysis	5
CHEM 351 Physical Chemistry I	3
CHEM 352 Physical Chemistry II	3
CHEM 353 Physical Chemistry III	3
CHEM 354 Physical Chemistry Laboratory	2
CHEM 371 Biochemical Principles	5
CHEM 372 Metabolism	3
CHEM 373 Molecular Biology	3
Select one course from:	
² CHEM 375 Molecular Biology Laboratory, or	
CHEM 474 Protein Techniques Laboratory	2
Select one course from:	
CHEM 375, 439 ³ , 474 ² ; BIO 361 ³ , 476	2
⁴ CHEM 459 Undergraduate Seminar (2) or SCM	
491 Student Teacher Seminar (1)(1)	2
CHEM 461 Senior Project Report	1
⁵ Advanced advisor approved chemistry electives	
to complete major, or concentration	12-23
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SUPPORT COURSES

BIO 161 Intro to Cell & Molecular Biology (B2)*	4
MATH 141, 142, 143 Calculus I, II, III (B1)*	4,4,4
PHYS 121, 122, 123 College Physics or	
PHYS 141, 132, 133 General Physics	4,4,4
² MCRO 224 General Microbiology I or BIO 452	
Cell Biology	4-5
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GENERAL EDUCATION (GE)

72 units required; 16 units are in Major/Support.

→See page 56 for complete GE course listing.

→Minimum of 12 units required at the 300-400 level.

Area A Communication (12 units)

A1 Expository Writing	4
A2 Oral Communication	4
A3 Reasoning, Argumentation, and Writing	4

Area B Science and Mathematics (no add'l units req'd)

B1 Mathematics/Statistics * 8 units in Support	0
B2 Life Science * 4 units in Support	0
B3 Physical Science * 4 units in Major	0
B4 One lab taken with either a B2 or B3 course	

Area C Arts and Humanities (20 units)

C1 Literature	4
C2 Philosophy	4

C3 Fine/Performing Arts	4
C4 Upper-division elective	4
Area C elective (Choose one course from C1-C4)	4

Area D/E Society and the Individual (20 units)

D1 The American Experience (40404)	4
D2 Political Economy	4
D3 Comparative Social Institutions	4
D4 Self Development (CSU Area E)	4
D5 Upper-division elective	4

Area F Technology Elective (upper division)

(4 units)	4
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ELECTIVES..... 7-19

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Concentrations (select one)

Molecular Biology Concentration

CHEM 377 Drugs and Poisons	3
BIO/CHEM 441 Bioinformatics Applications	4
BIO 452 Cell Biology	4
SCM 201 Orientation to Biotechnology	1
Advisor approved electives	11
(select at least 11 units from the following)	
CHEM 472 Plant Biochemistry (3)	
CHEM 473 Immunochemistry (3)	
CHEM 477 Biochemical Pharmacology (3)	
BOT 450 Plant Biotechnology (2)	
MCRO 225 General Microbiology II (5)	
MCRO 320 Emerging Infectious Diseases (3)	
MCRO 402 Virology (4)	
MCRO 424 Microbial Physiology (5)	
MCRO 433 Microbial Technology (3)	
MCRO 436 Environmental Microbiology (4)	
CPE/CSC 448 Bioinformatics Algorithms (4)	
ENGR 581/582/583 Biochemical	
Engineering (4)(4)(4)	
SCM 451 Ethics in the Sciences (3)	

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Polymers and Coatings Concentration

CHEM 444 Polymers and Coatings I	3
CHEM 445 Polymers and Coatings II	3
CHEM 446 Surface Chemistry of Materials	3
CHEM 447 Polymers and Coatings Lab I	2
CHEM 448 Polymers and Coatings Lab II	2
CHEM 449 Internship in Polymers and Coatings ...	2
MATE 210 Materials Engineering	3

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¹ Students should take CHEM 331 as soon as possible after completing CHEM 129.

² Required for Molecular Biology concentration.

³ Excess units count as approved advanced Biochemistry electives.

⁴ SCM 491 only for students pursuing Single-Subject Teaching Credential.

⁵ See department for advanced electives list for Biochemistry major.