

**2011-13 Cal Poly Catalog****Chemistry & Biochemistry Department****BS BIOCHEMISTRY**

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

\* = Required in Major/Support; also satisfies GE

Course sequencing: See flowcharts at

[www.csmadvising.calpoly.edu](http://www.csmadvising.calpoly.edu)

Note: No major, support or concentration courses may be taken as credit/no credit.

**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
<sup>1</sup> 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 .....	4
CHEM 373 Molecular Biology .....	3
CHEM 375 Molecular Biology Laboratory.....	3
Select two units from:	
CHEM 439 <sup>2</sup> , 474; BIO 361 <sup>2</sup> , 476.....	2
CHEM 459 Undergraduate Seminar (2) <i>or</i>	
SCM 491 <sup>3</sup> Student Teacher Seminar (1)(1).....	2
CHEM 461 Senior Project Report.....	1
<sup>4</sup> Select 12 units of approved advanced	
biochemistry electives (one course must be a	
lecture and at least two courses must be from	
List A) or complete major with Polymers and	
Coatings Concentration.. .....	12/18
List A (at least two courses):	
CHEM 252, 302, 341, 349 <sup>7</sup> , 357, 377, 400 <sup>5</sup> ,	
401 <sup>6</sup> , 405, 414, 419, 420, 439, 441, 444, 445,	
446, 447, 448, 449, 450, 451, 454, 458, 463,	
465, 466, 470, 474, 477, 478, 481, 484, 485 <sup>5</sup> ,	
495 <sup>5</sup> , 528;	
BIO/PSC 424; SCM 302, 325, 451	
List B:	
BIO 351, 361, 405, 406, 407, 408, 409, 410, 426,	
432, 452;	
MCRO 402, 423, 424; ZOO 331, 332, 422	
(11/17/14)(2/21/15)(3/17/16)	<b>75/81</b>

**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 <i>or</i>	
PHYS 141, 132, 133 General Physics.....	4,4,4
MCRO 224 General Microbiology I <i>or</i>	
BIO 452 Cell Biology.....	4-5

**GENERAL EDUCATION (GE)**

72 units required, 16 of which are specified in Major/Support.

→See page 39 for complete GE course listing.

→Minimum of 12 units required at the 300 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)**

56

<b>FREE ELECTIVES</b> .....	<b>10-17</b>
	<b>180</b>

**Concentration**

(Students may select the following concentration instead of advanced approved biochemistry electives in Major Courses)

**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
	<b>18</b>

<sup>1</sup> Students should take CHEM 331 as soon as possible after completing CHEM 129.

<sup>2</sup> Excess units count as approved advanced Biochemistry electives.

<sup>3</sup> SCM 491 only for students pursuing Single-Subject Teaching Credential.

<sup>4</sup> Consultation with advisor is recommended prior to selecting approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

<sup>5</sup> No more than 2 units may apply to approved advanced biochemistry electives.

<sup>6</sup> No more than 4 units may apply to approved advanced biochemistry electives.

<sup>7</sup> Students may take CHEM 349 or select from the following GE Area F courses: BIO 308, ENVE 324, SCM 335, SCM 360. (3/17/16)