CAL POLY
SAN LUIS OBISPO

B.S. in BIOCHEMISTRY
(Polymers and Coatings Concentration)
Suggested 4-Year Academic Flowchart

2021-2022 Catalog

Updated 6/22/21

FRESHMAN			SOPHOMORE			JUNIOR				SENIOR		
Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Summer	Fall	Winter	Spring
Gen Chem for Physical Science & Engineering I **CHEM 124 (4)** * [B1 & B3]	*Gen Chem for Physical Science & Engineering II* **CHEM 125 (4)** (CHEM 124 or AP Chem score of 5)	*Gen Chem for Physical Science & Engineering III* **CHEM 126 (4)** (CHEM 125 w/min C- or Instr. consent)		*Undergraduate Seminar I* **CHEM 203 (1)** (CHEM 126)		*Undergraduate Seminar II* **CHEM 303 (1)** (CHEM 203; CHEM 218)				*Undergraduate Seminar III: Senior Project* **CHEM 403 (1)** (CHEM 303; CHEM 352)		
Calculus I **MATH 141 (4)** * [B4]	*Calculus II* **MATH 142 (4)** (MATH 141 w/min C-) [GE Elective]	*Calculus III* **MATH 143 (4)** (MATH 142 w/min C-)	*Organic Chemistry I* **CHEM 216 (5)** (CHEM 126 or 129 w/min C- or Instr. consent)	*Organic Chemistry II* **CHEM 217 (3)** (CHEM 216 w/min C- or Instr. consent; Coreq: CHEM 221)	*Organic Chemistry III* **CHEM 218 (3)** (CHEM 217 w/min C- or Instr. consent; Coreq: CHEM 324)	*Metabolism* **CHEM 372 (4)** (CHEM 371)	*Molecular Biology* **CHEM 373 (3)** (CHEM 371)	*Molecular Biology Lab* **CHEM/BIO 475 (3)** (BIO 161; min C- in BIO 351 or CHEM 373 or Instr. consent)		*Physical Chemistry III* **CHEM 353 (3)** (CHEM 352)	*Physical Chemistry Lab* **CHEM 354 (2)** (CHEM 231/331. Coreq: CHEM 352)	
	Intro to Cell & Molecular Biology **BIO 161 (4)** (Recom: CHEM 110, 111, 124, or 127) [B2 & B3]	*General Physics IA* **PHYS 141 (4)** *	*Quantitative Analysis* **CHEM 331 (5)**[5] (CHEM 126 or 129)	*Organic Chemistry Laboratory II* **CHEM 221 (2)** (Coreq: CHEM 217)	*Organic Chemistry Laboratory III* **CHEM 324 (2)** (Coreq: CHEM 218)	**Choose one**[2]: *Protein Techniques Lab* **CHEM 474 (3)** (CHEM 371) **OR** *Gene Expression Lab* **BIO 476 (3)** (BIO/CHEM 475; CHEM 313 or 371)	*Physical Chemistry I* **CHEM 351 (3)** (CHEM 126 or 129; MATH 143; PHYS 122 or 132)	*Physical Chemistry II* **CHEM 352 (3)** (CHEM 351)			**Choose one:** *Cell Biology* **BIO 452 (4)** (BIO 351 or CHEM 373; CHEM 216, 312, or 316) **OR** *Gen Micro I* **MCRO 224 (5)** (BIO 161; CHEM 111, 124, or 127) **OR** **CHEM 432 (3)** (CHEM 371; Recom: CHEM 351)		
			General Physics II **PHYS 132 (4)** (PHYS 131 or HNRS 131 or PHYS 141)	*General Physics III* **PHYS 133 (4)** (PHYS 131 or HNRS 131 or PHYS 141; MATH 142. Recom: MATH 241)	*Biochemical Principles* **CHEM 371 (5)** (CHEM 217 or 317; BIO 161. Recom: CHEM 231/331)			*Polymers and Coatings Laboratory III* **CHEM 451 (2)**[3] (CHEM 447 or 547. Coreq: CHEM 450. Recom: CHEM 445 or 545; CHEM 448 or 548; CHEM 446)	OR	*Polymers and Coatings Internship* **CHEM 449 (2)**[3] (CHEM 444)			
Expository Writing **ENGL 133/134 (4)**** [A2] Can be taken anytime during Freshman Year												
Oral Communication **COMS 101/102 (4)**** [A1] Can be taken anytime during Freshman Year												
	Reasoning, Argumentation, & Writing [A3] **COMS 126, 145, ENGL 145, 147, ES 145, PHIL 126, or WGS 145 (4)**** (Completion of GE A2 with a C- or better) Can be taken anytime between Winter of Freshman and Winter of Sophomore Years.				**GE (4)** **	*Polymers and Coatings Laboratory I* **CHEM 447 (2)** (Coreq: CHEM 444)	*Polymers and Coatings Laboratory II* **CHEM 448 (2)** (CHEM 447. Coreq: CHEM 445)	*Surface Chemistry of Materials* **CHEM 446 (3)** (CHEM 125 or 128; CHEM 351, MATE 380, or ME 302)			**GE (4)** **	**GE (4)** **
											GE (4) **	**GE (4)** **
GE (4) **				**GE (4)** **	**GE (4)** **	*Polymers & Coatings I, II, & III* **CHEM 444 (3)** (CHEM 212/312 or 216/316)	**CHEM 445 (3)** (CHEM 217/317 and CHEM 444)	**CHEM 450 (3)** (CHEM 444 or 544)		**GE (4)** **	**GE (4)** **	**GE (4)** **
Free Elective (1)[1] Recom: CHEM 101	**Free Elective (1)**[1]	**Free Elective (1)**[1]	**Free Elective (1)**[1]	**Free Elective (1)**[1]			**Free Elective (1)**[1]					**Free Elective (3-4)**[1]
						Graduation Writing Requirement GWR* (Students can attempt to fulfill the requirement after 90 earned units; students should complete the requirement before senior year)						
17	17	17	15	15	18	13	12	12-14	0 - 2	12-13	14	15-16
											TOTAL:	180

Notes:

MOST GENERAL EDUCATION COURSES CAN BE TAKEN IN ANY ORDER AS LONG AS PREREQUISITES ARE MET

* Refer to current catalog for prerequisites.

** One course from each of the following GE areas must be completed: A1, A2, A3, Upper-Division B, C1, C2, Lower-Division C, Upper-Division C, D1, D2, Upper-Division D, E, F, and a GE Elective. Upper-Division B, Upper-Division C, and Upper-Division D should be taken only after Junior standing is reached (90 units).

Refer to online catalog for GE course selection, United States Cultural Pluralism (USCP) and Graduation Writing Requirement (GWR).

USCP requirement can be satisfied by some (but not all) courses within GE categories: Upper-Division B, C1, Upper-Division C, D1, D3, or E.

[1] A maximum of 10 units of elective credit may be required for the major to reach the 180 unit requirement to graduate. Excess units of AP Test credit may be applied to elective credit. The Chemistry Dept strongly recommends taking CHEM 101 (1) in your first quarter. Also, it is suggested that you take supplemental workshops (SCM 150) along with available Math/Science courses in your first year.

[2] The Biochemistry/Chemistry Department recommends CHEM 474 be taken as the Advanced Lab option. If the other options are chosen, excess units will count towards elective credit.

[3] Choose either CHEM 451 - Polymers and Coatings Laboratory III in Spring or CHEM 449 - P&C Internship over summer. For CHEM 449 - selected students will spend up to 12 weeks with an approved P&C firm engaged in production or related business.

Legend:

Course Title
Course # (Units)
(Prerequisite)
[GE Area]

- **Major (64)**
- **Support (31-33)**
- **Concentration (18)**
- **General Ed. (56)**
- **Free Electives (9-10)**