

Bachelor of Science in Biochemistry

The purpose of the Degree Roadmap is to serve as a guide for planning one's academic coursework required to complete a specific major semester by semester. Before enrolling, you can use the Degree Roadmap to get a feel for the courses you'll take in this major. After enrolling, refer to the University Catalog, Class Schedule and consult with your academic advisor each semester for advisement to specify which courses you will take to fulfill each graduation

requirement and are progressing toward graduation in a timely manner as possible. **The Degree Roadmap is subject to change and is NOT to be considered a replacement for advisement with an academic advisor.** See *University Catalog* for information on the Graduate Writing Assessment Requirement (GWAR). *See reverse side for General Education (GE) course requirements. **A minimum of 120 units are required for completion of degree.

Entry Level Skills Tests

English

EPT Waiver:	SAT I 500, ACT 22, AP 3 or EAP Exempted
Course Placement	120-140 ENG 88
Total Scores:	141-146 ENG 99
	143-146 ENG 195: satisfies ENG 99 & ENG 110
	147 ENG 110

Math

ELM Waiver:	SAT I & II 550, ACT 23, AP 3 or EAP	
Course Placement	00-40	MAT 3
Total Scores:	42-48	MAT 9
	50	G.E. Math

First Semester

Course		Units
CHE 110	General Chemistry I (meets GE B1*)	5
MAT 191	Calculus I (meets GE B4*)	5
GE A1*	Freshman Composition I	3
GE E*	The Whole Person area	3

Second Semester

Course		Units
CHE 112	General Chemistry II	5
MAT 193	Calculus II	5
GE A1*	Freshman Composition II	3
GE C2*	Humanities - Art Courses area	3

Third Semester

Course		Units
BIO 120	Principles of Biology I (meets GE B2*)	4
BIO 121	Principles of Biology I Lab (meets GE B3*)	1
CHE 230	Quantitative Analysis	4
PHY 130	General Physics I	5
GE A2*	Logic/Critical Reasoning area	3

Fourth Semester

Course		Units
BIO 122	Principles of Biology II	3
BIO 123	Principles of Biology II Lab	1
CHE 460	Chemical Literature	2
PHY 132	General Physics II	5
GE A3*	Oral Communication area	3
GE D1*	Perspectives on Individuals, Groups, & Society area	3
GE D3*	Perspectives on U.S. History area	3

Fifth Semester

Course		Units
CHE 310	Organic Chemistry I	4
CHE 311	Organic Chemistry Lab I	1
CHE 320	Physical Chemistry I	5
GE C3*	Humanities - Letters Courses area	3
GE D2*	Global & Historical Perspectives area	3
GWAR	ENG 350 or GWE	0-3

Sixth Semester

Course		Units
CHE 312	Organic Chemistry II	3
CHE 313	Organic Chemistry Lab II	2
CHE 322	Physical Chemistry II	3
CHE 420	Advanced Applications for Chemistry Independent Study	2
GE C1*	Humanities area	3

Seventh Semester

Course		Units
BIO 314	Developmental Biology	3
BIO 315	Developmental Biology Lab	1
CHE 450	Biochemistry I	5
CHE 451	Biochemistry Lab I	1
GE D4*	Perspectives on U.S. and California Government area	3
GE F2*	Studies in the Natural Sciences area	3

Eighth Semester

Course		Units
CHE 452	Biochemistry II	4
CHE 453	Biochemistry Lab II	2
Select	BIO 320 or BIO 340	3
GE F1*	Studies in the Humanities area	3
GE F3/G*	Studies in Social Sciences area/Cultural Pluralism area	3

Total Units: 129-132**

NOTE: Upper division elective courses cannot double count for upper division GE courses. This is a single field major.

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Learn More

- To learn more about the B.S. in Biochemistry at CSUDH, call the Department of Chemistry and Biochemistry at (310) 243-3376, visit NSM B-202, or visit **NBS.CSUDH.EDU**.
- For more information on applying to CSUDH, visit **CSUDH.EDU/FutureStudents**.
- Apply online at **CSUMENTOR.EDU**.
- Career information, visit **CSUDH.EDU/CareerCenter**.

Faculty

H. Leonardo Martinez, Department Chair
Ph.D., University of California, San Diego

Noel Sturm, Professor
Ph.D., University of Toledo

Sofia Pappatheodorou, Associate Professor
Ph.D., University of Miami

Tilly Wang, Assistant Professor
Ph.D., State University of New York at Stonybrook

Lihung Pu, Assistant Professor
Ph.D., University of California, Davis

Kenneth Rodriguez
Ph.D., Ohio State University

Oliver Seely, Professor
Ph.D., University of Illinois

Career Options

Graduates will be prepared for teaching chemistry in secondary schools, employment with industry or government entry into professional schools such as medicine or dentistry, or entry into law school with a view toward specialization in patent or environmental law. It will also prepare students for graduate work in chemistry or biochemistry.

*General Education (GE) Requirements

A. **Basic Skills:**

Courses must be passed with a grade of "C" or higher.

GE A1: ENG 110, ENG 111 (both required)

GE A2: PHI 120 or PSY 110

GE A3: THE 120

GE A4: CSC 101 or LIB 150 (optional category)

GE D2: AFS 201, ANT 102, CHS 200, GEO 100, HIS 120, HIS 121, POL 100

GE D3: HIS 101

GE D4: POL 101

B. **Area of the Natural Sciences and Quantitative Reasoning:**

Select one course from each category below. Category 4 courses must be passed with a grade of "C" or higher.

GE B1: CHE 102, EAR 100, GEO 200, PHY 100

GE B2: ANT 101, BIO 102

GE B3: BIO 103, EAR 101, CHE 103

GE B4: MAT 105, 131, 153, 171, 191, 193

E. **Objectives for Lifelong Learning and Self-Development:**

Select one course from the following.

GE E: HEA 100, HSC 201, KIN 235, REC 100, UNV 101

F. **Upper Division Integrative Studies:**

Select one course from each category. Courses in this category are to be taken after 60 semester units and ALL lower division General Education courses have been completed.

GE F1: HUM 310, 312, 314

GE F2: SMT 310, 312, 314, 416

GE F3: SBS 318¹

C. **Area of the Humanities:**

Select one course from each category below.

In categories 2 and 3, select courses from different departments.

GE C1: HUM 200

GE C2: ART 100, ART 101, CHS 125, COM 130, DAN 130, MUS 101, MUS 110, THE 100, THE 160

GE C3: AFS 200, AFS 231, APP 101, CHS 100, CHS 205, ENG 230, FRE 220, HUM 212, PHI 101, PHI 102, SPA 151, SPA 221

G. **Cultural Pluralism Requirement:**

Within their General Education selections or within other requirements, all students must take one course which addresses cultural pluralism (i.e. the impact of the integration of cultures).

GE G: ANT 312, 336, 337, 338, 339, 340, 342, 389, CHS 300, HIS 305, MUS 401, PHI 383, SBS 318, SOC 322, SOC 331, SOC 383

D. **Area of the Social Sciences:**

Select one course from each category below.

In categories 1 and 2, select courses from different departments.

GE D1: AFS 212, AFS 220, ANT 100, APP 212, CHS 212, PSY 101, SOC 101, SOC 102, WMS 250

1 SBS 318 satisfies both F3 and G areas. Students will receive only three units credit, but will have met both requirements.

Last modified on September 30, 2011