

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.

Upper Division Transfer Requirements

- Complete a minimum 60 transferable semester (or 90 quarter) units with a 2.0 GPA (nonresidents require 2.4 GPA) and be in good standing at the last college or university attended. Within those 60 semester units, complete a minimum of 30 semester (or 45 quarter) units of General Education courses with a 2.0 GPA with a "C" grade or better, including Oral Communication, Written Communication (English Composition), Logic/Critical Thinking and Mathematics/Quantitative Reasoning.
- Complete and submit a CSU Application for Admission by the posted deadline through CSU Mentor at CSUMENTOR.EDU.
- Submit official transcripts from all colleges attended.
- Students applying to an impacted program may have to meet supplementary requirements.
- The following degree roadmap assumes you have junior standing (60 units) and have completed all lower division General Education Courses.
- Minimum of 120 units are required for completion of degree, 30 of which must be taken in residence at CSUDH.

First Semester		
Course		Units
CHE 310	Organic Chemistry I	4
CHE 311	Organic Chemistry Lab I	1
CHE 320	Physical Chemistry I	5
GWAR	ENG 350 or GWE	0-3

Second 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 F1*	Studies in the Humanities area	3

Third Semester		
Course		Units
BIO 314	Developmental Biology	3
BIO 315	Developmental Biology Lab	1
CHE 450	Biochemistry I	4
CHE 451	Biochemistry Lab I	1
GE F2*	Studies in the Natural Sciences area	3

Fourth Semester		
Course		Units
CHE 452	Biochemistry II	4
CHE 453	Biochemistry Lab II	2
CHE 460	Chemical Literature	2
Select	BIO 320 or BIO 340	3
GE F3/G*	Studies in Social Sciences area/Cultural Pluralism	3

Total Units: 49-52**

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)

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

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

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

GE D2: AFS 201, ANT 102, CHS 200, GEO 100, HIS 120, HIS 121, POL 100
 GE D3: HIS 101
 GE D4: POL 101

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

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

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