

Degree: Biochemistry, B.S. 26-27

Requirement Area	Course	Course Title	Prerequisites	Units
First Semester (FALL)				
Recommended	SCI 130	Connecting to STEM Majors		2
1C		Oral Communication		3
5A/LD Major	CHEM 111	General Chemistry I		3
5C Major	CHEM 111L	General Chemistry Lab I		2
Area 2/LD Major	MATH 130	Calculus I	One from the following: Satisfactory score of 78 or higher on Mathematics Placement Exam, MATH 120 or MATH 125 (either course with grade C- or better).	4
Area 4/CODE 1		Social Science/US Code		3
Total:				17
Second Semester (SPRING)				
1A		Written Communications		3
3A		Arts		3
LD Major	MATH 131	Calculus II	MATH 130 with grade C- or better.	3
LD Major	CHEM 112	General Chemistry II		3
LD Major	CHEM 112L	General Chemistry II Lab		2
Total:				14
Third Semester (FALL)				
1B/Second Comp		Critical Thinking and Composition		3
UD Major	CHEM 331	Organic Chemistry I	CHEM 112 with grade C- or better.	5
5B/5C/LD Major	BIOL 140A	Principles of Cell and Molecular Biology		5
LD Major	MATH 230	Calculus III	MATH 131 with grade C- or better.	3
Total:				16
Fourth Semester (SPRING)				
Free Elective				3
LD Major	BIOL 140B	Principles of Organismal Biology	BIOL 140A with grade C- or better.	5
LD Major	CHEM 220	Quantitative Analysis	CHEM 112 with grade C- or better.	4
UD Major	CHEM 332	Organic Chemistry II	CHEM 331 with grade C- or better.	5
Total:				17
Fifth Semester (FALL)				
3B		Humanities		3
Area 6		Ethnic Studies		3
UD Major	CHEM 441	Biochemistry I	CHEM 332 with grade C- or better.	4
5A/5C/LD Major	PHYS 125	Principals of Physics I		4
Total:				14
Sixth Semester (SPRING)				
UD Major	CHEM 442	Biochemistry II	CHEM 441 with grade C- or better.	4
UWR				3
5A/5C/LD Major	PHYS 126	Principals of Physics II		4
Free Elective				4
Total:				15
Seventh Semester (FALL)				
Area 4/Code 2		US Code		3
UD Major	CHEM 443	Biochemistry Laboratory I	CHEM 443 with grade C- or better.	3
UD Major		Biochemistry Elective		3
UD Major	CHEM 351	Physical Chemistry I	CHEM 332, MATH 230, PHYS 136, all with grade C- or better.	3
UD-Area 5/Overlay		UD Science	Completion of GE Areas 1A, 1B, 1C and GE-2 with grade C- (CR) or better	3
Total:				15
Eighth Semester (SPRING)				
UD Major	CHEM 352	Physical Chemistry II	CHEM 351 with grade C- or better.	3
UD Major	CHEM 444	Biochemistry Laboratory II		3
UD-Area 3/Overlay		UD Arts or Humanities	Completion of GE Areas 1A, 1B, 1C and GE-2 with grade C- (CR) or better	3
UD-Area 4/Overlay		UD Social Science	Completion of GE Areas 1A, 1B, 1C and GE-2 with grade C- (CR) or better	3
Total:				12
Total Units:				120

Note: No changes to, or from, the credit/no credit pattern are permitted after the Grade Type Change period. There are no exceptions to this rule. Courses in a student's major department, regardless of course prefix, may not be taken "CR/NC," unless that is the only grading pattern in the course.

CSUEB General Breadth and Graduation Requirement Checklist	
Area 1 (9 units): English Communication	
<input type="checkbox"/>	1A - Lower Division English Composition
<input type="checkbox"/>	1B - Lower Division Critical Thinking and Composition
<input type="checkbox"/>	1C - Lower Division Oral Communication
Area 2 (3 units): Mathematical Concepts and Quantitative Reasoning	
<input type="checkbox"/>	Area 2 - Mathematical Concepts and Quantitative Reasoning
Area 3 (6 units): Arts & Humanities - Minimum of two different disciplines as designated by course prefix (e.g., ART, THEA, MUS)	
<input type="checkbox"/>	3A - Arts and Humanities (Arts)
<input type="checkbox"/>	3B - Arts and Humanities (Humanities)
Area 4 (6 units): Social and Behavioral Sciences - Minimum of two different disciplines as designated by course prefix (e.g., ANTH, ECON, POSC)	
<input type="checkbox"/>	Area 4 - Lower Division Social and Behavioral Sciences
<input type="checkbox"/>	Area 4 - Lower Division Social and Behavioral Sciences
Area 5 (7 units): Physical and Biological Sciences	
<input type="checkbox"/>	5A - Lower Division Physical and Biological Sciences (Physical)
<input type="checkbox"/>	5B - Lower Division Physical and Biological Sciences (Biological)
<input type="checkbox"/>	5C - Lower Division Physical and Biological Sciences (Laboratory) -- May be embedded in 5A or 5B course, as long as 7 units met for lower-division Subject Area 5.
Area 6 (3 units): Ethnic Studies	
<input type="checkbox"/>	Area 6 - Ethnic Studies
Second Composition : Second Composition (Required as part of 1B for 2025-26 or later catalog)	
<input type="checkbox"/>	Second Composition
University Writing Requirement (3-4 units)	
<input type="checkbox"/>	UWR
U.S. Code (American Institutions Requirement) - Two courses (6 units) covering three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. Constitution), and US-3 (California State & Local Government).	
<input type="checkbox"/>	Code 1
<input type="checkbox"/>	Code 2
Upper Division GE Requirements (9 units): Should be taken after completion of 1A, 1B, 1C, and Area 2 with a C- (CR)	
<input type="checkbox"/>	UD- Area 3 - Upper Division Arts or Humanities
<input type="checkbox"/>	UD- Area 4 - Upper Division Social and Behavioral Sciences
<input type="checkbox"/>	UD- Area 5 - Upper Division Science or Mathematical Concepts/Quantitative Reasoning
Overlay Requirements (9 units): Courses may be upper or lower division, and GE or major	
<input type="checkbox"/>	Diversity (Div)
<input type="checkbox"/>	Social Justice (SJ)
<input type="checkbox"/>	Sustainability (S)
Elective Courses	
Choose one (1) course from the following for 3 units:	
CHEM 445 - Protein Structure Units: 3	
CHEM 446 - Nucleic Acid Chemistry Units: 3	
CHEM 447 - Major Organ Biochemistry Units: 3	

***Students are required to take a minimum of 40 semester units as upper division (includes 9 units upper division GE)**