

Degree: Biochemistry, B.A.: Chemistry Education Concentration 25-26				
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/LD 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 6		Ethnic Studies		3
		Total:		17
Second Semester (SPRING)				
1A		Written Communication		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	CHEM 111 with grade C- or better.	3
LD Major	CHEM 112L	General Chemistry II Lab		2
		Total:		14
Third Semester (FALL)				
1B		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
		Total:		14
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)				
Sustainability Overlay/LD Major	GEOL 100	Earth Systems Science		4
3B		Humanities		3
UD Major	CHEM 441	Biochemistry I	CHEM 332 with grade C- or better.	4
5A/5C/LD Major	PHYS 125	Principles of Physics I		4
		Total:		15
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	Principles of Physics II	PHYS 125	4
Area 4/Code1				3
		Total:		14
Seventh Semester (FALL)				
Area 4/Code 2				3
UD Major	CHEM 443	Biochemistry Laboratory I		3
UD Major	CHEM 350	Biophysical Chemistry		3
UD-Area 5/Overlay			Completion of GE Areas 1A, 1B, 1C and GE-2 with grade C- (CR) or better	3
Free Elective				3
		Total:		15
Eighth Semester (SPRING)				
UD Major	CHEM 470	Chemical Literature	CHEM 332 with grade C- or better.	1
UD Major	CHEM 425	Environmental Chemistry	CHEM 331 with grade C- or better.	4
UD-Area 4/Overlay			Completion of GE Areas 1A, 1B, 1C and GE-2 with grade C- (CR) or better	3
UD-Area 3/UD Major	PHIL 335	Philosophy of Science	Completion of GE Areas 1A, 1B, 1C and GE-2 with grade C- (CR) or better	3
UD Major	TED 301	Exploring Education		3
		Total:		14
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)	
Concentration Courses	
The Bachelor of Arts degree, major in Biochemistry with a concentration in Chemistry Education, is designed for students interested in a career teaching chemistry at the high school level, but also prepares students to work as biochemists in an industrial setting. This program will prepare graduates to enter a single subject credential program.	
CHEM 425 - Environmental Chemistry Units: 4	
GEOL 100 - Earth Systems Science Units: 4 ; G.E./G.R. Area: B1, B3; Sustainability	
PHIL 335 - Philosophy of Science Units: 3 ; G.E./G.R. Area: UD-Area 3	
TED 301 - Introduction to Education Units: 3	

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