

Degree: Biochemistry, B.A.: Chemistry Education Concentration 22-23				
Requirement Area	Course	Course Title	Prerequisites	Units
First Semester (FALL)				
E	GS 101A	Foundations of Success I		1
A1		Oral Communication		3
B1/LD Major	CHEM 111	General Chemistry I		3
B3/LD Major	CHEM 111L	General Chemistry Lab I		2
B4/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
F		Ethnic Studies		3
		Total:		16
Second Semester (SPRING)				
E	GS 101B	Foundations of Success II		1
A2		Written Communication		3
C1		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.	5
		Total:		15
Third Semester (FALL)				
E		Lifelong Learning and Self-Development		1
A3		Critical Thinking		3
UD Major	CHEM 331	Organic Chemistry I	CHEM 112 with grade C- or better	5
B2/LD Major	BIOL 140A	Principles of Cell and Molecular Biology		5
		Total:		14
Fourth Semester (SPRING)				
Second Composition	ENGL 200 or PHYS 230			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
C2				3
UD Major	CHEM 441	Biochemistry I	CHEM 332 with grade C- or better.	4
B3/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
UD-B/Overlay				3
LD Major	PHYS 126	Principles of Physics II	PHYS 125	4
D1/Code1				3
		Total:		14
Seventh Semester (FALL)				
Code 2				3
UD Major	CHEM 443	Biochemistry Laboratory I		3
UD Major	CHEM 350	Biophysical Chemistry		3
D2				3
Add'l C1 or C2				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-D/Overlay				3
UD-C/UD Major	PHIL 335	Philosophy of Science	Completion of GE areas A1, A2, A3 and B4.	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 A (9 units): Communication in the English Language & Critical Thinking (Must earn passing grade of C-/CR or better)	
<input type="checkbox"/> A1. COMM 100 or 104, MLL 111	
<input type="checkbox"/> A2. ENGL 101, 102, or 104	
<input type="checkbox"/> A3. PHIL 100	
Area B (9 units) : Scientific Inquiry & Quantitative Reasoning	
<input type="checkbox"/> B1. Physical Science	
<input type="checkbox"/> B2. Life Science	
<input type="checkbox"/> B3. Laboratory Activity	
<input type="checkbox"/> B4. Quantitative Reasoning (Must earn passing grade of C-/CR or better.)	
Area C (9 units): Arts & Humanities - Minimum of three different disciplines as designated by course prefix (e.g., ART, THEA, MUS)	
<input type="checkbox"/> C1. Arts	
<input type="checkbox"/> C2. Humanities	
<input type="checkbox"/> *Additional Lower-division Area C Course in Arts (C1) or Humanities (C2)	
Area D (6 units) : Social Sciences - Minimum of three different disciplines as designated by course prefix (e.g., ANTH, ECON, POSC)	
<input type="checkbox"/> D1.	
<input type="checkbox"/> D2.	
Area E (3 units) : Lifelong Learning and Self-Development	
<input type="checkbox"/> E.	
Area F (3 units): Ethnic Studies	
<input type="checkbox"/> F.	
Second Composition : Requires completion of GE A2 with a C-/CR or better. Must be completed before attaining junior standing.	
<input type="checkbox"/> Second Composition	
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 A1, A2, A3, and B4 with a C- (CR)	
<input type="checkbox"/> UD-B. Upper-division Science Inquiry and Quantitative Reasoning	
<input type="checkbox"/> UD-C. Upper-division Arts OR Humanities	
<input type="checkbox"/> UD-D. Upper-division Social Sciences	
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-C	
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)