

Degree: Biochemistry, B.S. 21-22

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		5
			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).	
B4/LD Major	MATH 130	Calculus I		4
D1/CODE 1		Social Science/US Code		3
		Total:		16
Second Semester (SPRING)				
E	GS 101B	Foundations of Success II		1
A2		Written Communications		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		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
LD Major	MATH 230	Calculus III	MATH 131 with grade C- or better.	3
		Total:		17
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)				
C2		Humanities		3
F		Ethnic Studies		3
UD Major	CHEM 441	Biochemistry I	CHEM 332 with grade C- or better.	4
B3/LD Major	PHYS 135	Physics for Scientists and Engineers I		4
		Total:		14
Sixth Semester (SPRING)				
UD Major	CHEM 442	Biochemistry II	CHEM 441 with grade C- or better.	4
UD-B/Overlay		UD Science	Completion of GE areas A1, A2, A3 and B4.	3
LD Major	PHYS 136	Physics for Scientists and Engineers I		4
Add'l C1 or C2*		Arts or Humanities		3
		Total:		14
Seventh Semester (FALL)				
Code 2		US Code		3
UD Major	CHEM 443	Biochemistry Laboratory I	CHEM 442 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
D2				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-C/Overlay		UD Arts or Humanities	Completion of GE areas A1, A2, A3 and B4.	3
UD-D/Overlay		UD Social Science	Completion of GE areas A1, A2, A3 and B4.	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 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)	
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	