

Degree: Chemistry, B.S.: Bioanalytical and Forensics Concentration 23-24				
Requirement Area	Course	Course Title	Prerequisites	Units
First Semester (FALL)				
E	SCI 130	Connecting to STEM Majors		2
A1				3
B1/LD Major	CHEM 111	General Chemistry I		3
B3/LD Major	CHEM 111L	General Chemistry Lab I		2
B4	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:		17
Second Semester (SPRING)				
A2				3
C1				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				1
A3	PHIL 100	Workshop in 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		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)				
UD Major	BIOL 310	Genetic Analysis I	BIOL 140A.	4
Add'l C1 or C2				3
UD Major	CHEM 340	Survey of Biochemistry	CHEM 230 or CHEM 332, both with	3
B1/B3 LD Major	PHYS 135	Physics for Scientists and Engineers I		4
		Total:		14
Sixth Semester (SPRING)				
UD Major	CHEM 320	Bioanalytical and Forensic Instrumentation	CHEM 230 or CHEM 332, both with	3
LD Major	PHYS 136	Physics for Scientists and Engineers II	MATH 130 and PHYS 135.	4
UWR/UD-C/Overlay			Completion of GE areas A1, A2, A3	3
D1/Code				3
C2				3
		Total:		16
Seventh Semester (FALL)				
UD Major	CHEM 351	Physical Chemistry I	CHEM 332, MATH 230, PHYS 136, all	3
UD Major	BIOL 415	PCR, Sequencing and Fragment Analysis	BIOL 310.	3
elective				3
D2/Code 2				3
Elective				1
		Total:		13
Eighth Semester (SPRING)				
UD Major	CHEM 420	Instrumental Analysis	CHEM 220, CHEM 332; and PHYS 126	3
UD Major	CHEM 352	Physical Chemistry II	CHEM 351 with grade C- or better.	3
UD-D/Overlay			Completion of GE areas A1, A2, A3	3
UD-B/Overlay				3
		Total:		12
Total Units:				121

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.

Revised: 03/24/23

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 two 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 two 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.	
<input type="checkbox"/>	Second Composition
University Writing Requirement	
<input type="checkbox"/>	UWR
U.S. Code (American Institutions Requirement) - Two courses (6 units)	
<input type="checkbox"/>	Code 1.
<input type="checkbox"/>	Code 2.
Upper Division GE Requirements (9 units): Should be taken after	
<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,	
<input type="checkbox"/>	Diversity (Div)
<input type="checkbox"/>	Social Justice (SJ)
<input type="checkbox"/>	Sustainability (S)

*Students are required to take a minimum of 40 semester units as upper