

Degree: Chemistry, B.S. 26-27				
Requirement Area	Course	Course Title	Prerequisites	Units
<b>First Semester (FALL)</b>				
Recommended	SCI 130	Connecting to STEM Majors		2
1C				3
LD Major	CHEM 111	General Chemistry I		3
LD Major	CHEM 111L	General Chemistry Lab I		2
Area 2	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
			<b>Total:</b>	17
<b>Second Semester (SPRING)</b>				
1A	ENGL 102			3
3A				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
			<b>Total:</b>	14
<b>Third Semester (FALL)</b>				
1B/Second Comp				3
UD Major	CHEM 331	Organic Chemistry I	CHEM 112 with grade C- or better.	5
5A/5C	PHYS 135	Physics for Scientists and Engineers I	MATH 130.	4
LD Major	MATH 230	Calculus III	MATH 131 with grade C- or better.	3
			<b>Total:</b>	15
<b>Fourth Semester (SPRING)</b>				
LD Major	PHYS 136	Physics for Scientists and Engineers II	MATH 130 and PHYS 135.	4
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
5B				3
			<b>Total:</b>	16
<b>Fifth Semester (FALL)</b>				
UD Major	CHEM 351	Physical Chemistry I	CHEM 332, MATH 230, PHYS 136, all with grade C- or better.	3
3B				3
LD Major	PHYS 137	Physics for Scientists and Engineers III	MATH 130 and PHYS 136.	4
Area 4/Code1				3
			<b>Total:</b>	13
<b>Sixth Semester (SPRING)</b>				
UD Major/UD Area 5/S	Chem 306	Green Chemistry and Sustainability	GE 1A, 1B, 1C, 2	
UD Major	CHEM 340	Survey of Biochemistry	CHEM 230 or CHEM 332, both with grade C- or better.	3
UD Major	CHEM 352	Physical Chemistry II	CHEM 351 with grade C- or better.	3
UD Major	CHEM 355	Physical Chemistry Laboratory	CHEM 351.	2
Free Elective				4
UWR				3
			<b>Total:</b>	15
<b>Seventh Semester (FALL)</b>				
Area 4/Code 2				3
UD Major	CHEM 410	Advanced Inorganic Chemistry	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better.	4
UD Major	CHEM 420	Instrumental Analysis	CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better.	3
UD Major	CHEM 470	Chemical Literature		1
Free Elective				4
			<b>Total:</b>	15
<b>Eighth Semester (SPRING)</b>				
UD Major		Chemistry elective		3
UD Major	CHEM 415	Inorganic Chemistry Laboratory	CHEM 410 with grade C- or better.	2
	Chem 425	Environmental Chemistry		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/Overlay			Completion of GE Areas 1A, 1B, 1C and GE-2 with grade C- (CR) or better	3
			<b>Total:</b>	15
<b>Total Units:</b>				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	
<b>Area 1 (9 units): English Communication</b>	
<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
<b>Area 2 (3 units): Mathematical Concepts and Quantitative Reasoning</b>	
<input type="checkbox"/>	Area 2 - Mathematical Concepts and Quantitative Reasoning
<b>Area 3 (6 units): Arts &amp; Humanities - Minimum of two different disciplines as designated by course prefix (e.g., ART, THEA, MUS)</b>	
<input type="checkbox"/>	3A - Arts and Humanities (Arts)
<input type="checkbox"/>	3B - Arts and Humanities (Humanities)
<b>Area 4 (6 units): Social and Behavioral Sciences - Minimum of two different disciplines as designated by course prefix (e.g., ANTH, ECON, POSC)</b>	
<input type="checkbox"/>	Area 4 - Lower Division Social and Behavioral Sciences
<input type="checkbox"/>	Area 4 - Lower Division Social and Behavioral Sciences
<b>Area 5 (7 units): Physical and Biological Sciences</b>	
<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.
<b>Area 6 (3 units): Ethnic Studies</b>	
<input type="checkbox"/>	Area 6 - Ethnic Studies
<b>Second Composition : Second Composition (Required as part of 1B for 2025-26 or later catalog)</b>	
<input type="checkbox"/>	Second Composition
<b>University Writing Requirement (3-4 units)</b>	
<input type="checkbox"/>	UWR
<b>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 &amp; Local Government).</b>	
<input type="checkbox"/>	Code 1
<input type="checkbox"/>	Code 2
<b>Upper Division GE Requirements (9 units): Should be taken after completion of 1A, 1B, 1C, and Area 2 with a C- (CR)</b>	
<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
<b>Overlay Requirements (9 units): Courses may be upper or lower division, and GE or major</b>	
<input type="checkbox"/>	Diversity (Div)
<input type="checkbox"/>	Social Justice (SJ)
<input type="checkbox"/>	Sustainability (S)
<b>Additional Required Coursework</b>	
An additional 18 units minimum are required to complete the B.S. Chemistry major for students NOT choosing the Bioanalytical and Forensics concentration:	
CHEM 355 - Physical Chemistry Laboratory Units: 2	
CHEM 410 - Advanced Inorganic Chemistry Units: 4	
CHEM 415 - Inorganic Chemistry Laboratory Units: 2	
MATH 215 - Introduction to Linear Algebra Units: 3	
PHYS 137 - Physics for Scientists and Engineers III Units: 4	
Plus choose one (1) additional course for a minimum of 3 units from the following:	
CHEM 425 - Environmental Chemistry Units: 4	
CHEM 430 - Advanced Organic Chemistry Units: 3	
CHEM 450 - Classical and Statistical Thermodynamics Units: 3	