Degree: Chemistry, B.S. 24-25				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester (FALL)				
E	SCI 130	Connecting to STEM Majors		2
A1				3
LD Major	CHEM 111	General Chemistry I		3
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				3
			Total:	17
Second Semester (SPRING)				
A2	ENGL 102			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.	3
LD Major	CHEM 112L	General Chemistry II Lab		2
			Total:	14
Third Semester (FALL)				
E				1
A3				3
UD Major	CHEM 331	Organic Chemistry I	CHEM 112 with grade C- or better.	5
B1/B3	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
			Total:	16
Fourth Semester (SPRING)				
Second Composition	ENGL 200 or PHYS 230			3
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
			Total:	16
Fifth Semester (FALL)				
UD Major	CHEM 351	Physical Chemistry I	CHEM 332, MATH 230, PHYS 136, all with grade C- or better.	3
C2				3
LD Major	MATH 215	Introduction to Linear Algebra	MATH 130.	3
LD Major	PHYS 137	Physics for Scientists and Engineers III	MATH 130 and PHYS 136.	4
D1/Code1				3
			Total:	16
Sixth Semester (SPRING)				
UD Major	CHEM 340	Survery 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
Add'l C1 or C2*				3
UWR				3
			Total:	14
Seventh Semester (FALL)				
D2/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
B2				3
			Total:	13
Eighth Semester (SPRING)				
UD Major		Chemistry elective		3
UD Major	CHEM 415	Inorganic Chemistry Laboratory	CHEM 410 with grade C- or better.	2
UD-D/Overlay			Completion of GE areas A1, A2, A3, B1 and B4.	3
UD-C/Overlay			Completion of GE areas A1, A2, A3, B1 and B4.	3
UD-B/Overlay			Completion of GE areas A1, A2, A3, B1 and B4.	3
			Total:	14
Total Units:				120

Updated: 4/1/2024

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)
☐ A1. COMM 100 or 104, MLL 111
☐ A2. ENGL 101, 102, or 104
☐ A3. PHIL 100
Area B (9 units) : Scientific Inquiry & Quantitative Reasoning
☐ B1. Physical Science
☐ B2. Life Science
☐ B3. Laboratory Activity
☐ 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)
☐ C1. Arts
☐ C2. Humanities
☐ *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)
☐ D1.
☐ D2.
Area E (3 units) : Lifelong Learning and Self-Development
☐ E.
Area F (3 units): Ethnic Studies
☐ F.
Second Composition : Requires completion of GE A2 with a C-/CR or better. Must be completed before attaining junior standing.
☐ Second Composition
University Writing Requirement
☐ 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).
☐ Code 1.
☐ Code 2.
Upper Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)
☐ UD-B. Upper-division Science Inquiry and Quantitative Reasoning
☐ UD-C.Upper-division Arts OR Humanities
☐ UD-D. Upper-division Social Sciences
Overlay Requirements (9 units): Courses may be upper or lower division, and GE or major
☐ Diversity (Div)
☐ Social Justice (SJ)
☐ Sustainability (S)
Additional Required Coursework
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