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	Second Semester (SFRING)		3
C1	ENGE 102			3
LD Major	MATH 131	Calculus II	MATH 130 with grade C- or better.	- 3
LD IVIAJOI	WAITI 131	Calculus II	WATT 130 With grade C- or better.	-
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
	T	Fifth Semester (FALL)	CHEM 222 MATH 220 DUVE 126 -II	
UD Major	CHEM 351	Physical Chemistry I	CHEM 332, MATH 230, PHYS 136, all with grade C- or better.	3
C2	CITEINI 331	i nysicai enemistry i	with grade e or better.	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	11113 137	Thysics for Scientists and Engineers in	IVIAITI 150 dild 11115 150.	3
D1/Code1				
			Total:	16
		Sixth Semester (SPRING)	1.2.2	
			CHEM 230 or CHEM 332, both with	
UD Major	CHEM 340	Survery of Biochemistry	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
		, ,		3
Add'l C1 or C2*		· · · · · · · · · · · · · · · · · · ·		3
	•			
Add'l C1 or C2* UWR			Total:	
		Seventh Semester (FALL)	Total:	14
UWR		Seventh Semester (FALL)	Total:	14
		Seventh Semester (FALL)	Total: CHEM 332; and CHEM 350 or CHEM	
UWR	CHEM 410	Seventh Semester (FALL) Advanced Inorganic Chemistry		14
UWR D2/Code 2	CHEM 410		CHEM 332; and CHEM 350 or CHEM	3
UWR D2/Code 2	CHEM 410	Advanced Inorganic Chemistry	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better.	3
UWR D2/Code 2 UD Major UD Major	CHEM 410		CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126	3 4
UWR D2/Code 2 UD Major		Advanced Inorganic Chemistry	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better.	3 3 3 3
UWR D2/Code 2 UD Major UD Major		Advanced Inorganic Chemistry Instrumental Analysis	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or	3 4
UWR D2/Code 2 UD Major UD Major		Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING)	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better.	3 4 3 3 13
UWR D2/Code 2 UD Major UD Major		Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING) Chemistry elective	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better.	3 4 3 3 13
UWR D2/Code 2 UD Major UD Major B2		Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING)	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better. Total: CHEM 410 with grade C- or better.	3 4 3 3 13
UVR D2/Code 2 UD Major UD Major B2 UD Major UD Major UD Major	CHEM 420	Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING) Chemistry elective	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better. Total: CHEM 410 with grade C- or better. Completion of GE areas A1, A2, A3, B1	3 3 3 3 13
UWR D2/Code 2 UD Major UD Major B2 UD Major	CHEM 420	Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING) Chemistry elective	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better. Total: CHEM 410 with grade C- or better. Completion of GE areas A1, A2, A3, B1 and B4.	3 4 3 3 13
UWR D2/Code 2 UD Major UD Major B2 UD Major UD Major UD Major UD Major UD Major UD-D/Overlay	CHEM 420	Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING) Chemistry elective	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better. Total: CHEM 410 with grade C- or better. Completion of GE areas A1, A2, A3, B1 and B4. Completion of GE areas A1, A2, A3, B1	3 3 3 3 13
D2/Code 2 UD Major UD Major B2 UD Major UD Major UD Major	CHEM 420	Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING) Chemistry elective	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better. Total: CHEM 410 with grade C- or better. Completion of GE areas A1, A2, A3, B1 and B4. Completion of GE areas A1, A2, A3, B1 and B4.	3 3 3 3 13
UVR D2/Code 2 UD Major UD Major B2 UD Major UD Major UD Major UD Major UD-D/Overlay UD-C/Overlay	CHEM 420	Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING) Chemistry elective	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better. Total: CHEM 410 with grade C- or better. Completion of GE areas A1, A2, A3, B1 and B4. Completion of GE areas A1, A2, A3, B1 and B4. Completion of GE areas A1, A2, A3, B1	33 33 33 33 22
UWR D2/Code 2 UD Major UD Major B2 UD Major UD Major UD Major UD Major UD Major UD-D/Overlay	CHEM 420	Advanced Inorganic Chemistry Instrumental Analysis Eighth Semester (SPRING) Chemistry elective	CHEM 332; and CHEM 350 or CHEM 351, all with grade C- or better. CHEM 220, CHEM 332; and PHYS 126 or PHYS 136, all with grade C- or better. Total: CHEM 410 with grade C- or better. Completion of GE areas A1, A2, A3, B1 and B4. Completion of GE areas A1, A2, A3, B1 and B4.	3 3 3 3 13

Updated: 4/1/2024

Area A (CSUEB General Breadth and Graduation Requirement Checklist
	9 units): Communication in the English Language & Critical Thinking (M earn passing grade of C-/CR or better)
☐ A1. C	OMM 100 or 104, MLL 111
☐ A2. E	NGL 101, 102, or 104
☐ A3. P	HIL 100
	Area B (9 units) : Scientific Inquiry & Quantitative Reasoning
☐ B1. P	hysical Science
☐ B2. Li	ife Science
☐ B3. Li	aboratory Activity
☐ B4. Q	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. A	rts
☐ C2. H	lumanities
□ *Add	itional Lower-division Area C Course in Arts (C1) or Humanities (C2)
	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.	. ,
	Composition : Requires completion of GE A2 with a C-/CR or better. Me
	be completed before attaining junior standing.
☐ Seco	nd Composition
	University Writing Requirement
□ UWR	
	ode (American Institutions Requirement) - Two courses (6 units) covering
uiree U	.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. Constitution), a US-3 (California State & Local Government).
☐ Code	
□ Code	
	Division GE Requirements (9 units): Should be taken after completion
Opper	A1, A2, A3, and B4 with a C- (CR)
	Upper-division Science Inquiry and Quantitative Reasoning
	.Upper-division Arts OR Humanities
). Upper-division Social Sciences
□ UD-D	
□ UD-D	y Requirements (9 units): Courses may be upper or lower division, and
Overla	y Requirements (9 units): Courses may be upper or lower division, and or major
Overla	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div)
UD-D Overla Diver	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) I Justice (SJ)
UD-D Overla Diver	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) Justice (SJ) sinability (S)
UD-D Overlay Diver Socia Susta	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) I Justice (SJ) inability (S) Additional Required Coursework
UD-D Overlar Diver Socia Susta	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) I Justice (SJ) inability (S) Additional Required Coursework tional 18 units minimum are required to complete the B.S. Chemistry
UD-D Overla Diver Socia Susta An addit	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) Il Justice (SJ) sinability (S) Additional Required Coursework sitional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration:
UD-D Overla Diver Socia Susta An addit	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) I Justice (SJ) inability (S) Additional Required Coursework tional 18 units minimum are required to complete the B.S. Chemistry
□ UD-D Overlar □ Diver □ Socia □ Susta An addit major fo	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) I Justice (SJ) inability (5) Additional Required Coursework tional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration: 55 - Physical Chemistry Laboratory Units: 2
□ UD-D Overlar □ Diver □ Socia □ Susta An addit major fo CHEM 3	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) I Justice (51) inability (S) Additional Required Coursework tional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration: 55 - Physical Chemistry Laboratory Units: 2 10 - Advanced Inorganic Chemistry Units: 4
□ UD-D Overlay □ Diver □ Socia □ Susta An addit major fc CHEM 3 CHEM 4 CHEM 4	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) Justice (SJ) sinability (S) Additional Required Coursework stional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration: 55 - Physical Chemistry Laboratory Units: 2 10 - Advanced Inorganic Chemistry Units: 4 15 - Inorganic Chemistry Laboratory Units: 2
□ UD-D Overlay □ Diver □ Socia □ Susta An addit major fc CHEM 3 CHEM 4 CHEM 4 MATH 2	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) Justice (SJ) sinability (S) Additional Required Coursework stional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration: 55 - Physical Chemistry Laboratory Units: 2 10 - Advanced Inorganic Chemistry Laboratory Units: 4 15 - Inorganic Chemistry Laboratory Units: 2
□ UD-D Overlan □ Diver □ Socia □ Susta An addit major fo CHEM 4 CHEM 4 MATH 2 PHYS 13	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) Il Justice (SI) inability (S) Additional Required Coursework tional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration: 55 - Physical Chemistry Laboratory Units: 2 10 - Advanced Inorganic Chemistry Laboratory Units: 4 15 - Inorganic Chemistry Laboratory Units: 3 77 - Physics for Scientists and Engineers III Units: 4
□ UD-D Overlan □ Diver □ Socia □ Susta An addit major fo CHEM 4 CHEM 4 MATH 2 PHYS 13 Plus cho	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) I Justice (51) inability (S) Additional Required Coursework tional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration: 55 - Physical Chemistry Laboratory Units: 2 10 - Advanced Inorganic Chemistry Units: 4 15 - Inorganic Chemistry Laboratory Units: 2 15 - Introduction to Linear Algebra Units: 3 7 - Physics for Scientists and Engineers III Units: 4 ose one (1) additional course for a minimum of 3 units from the followin
□ UD-D Overlav □ Socia □ Susta An addit major fo CHEM 4 CHEM 4 MATH 2 PHYS 13 Plus cho CHEM 4	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) Il Justice (SJ) sinability (S) Additional Required Coursework stional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration: 55 - Physical Chemistry Laboratory Units: 2 10 - Advanced Inorganic Chemistry Units: 4 15 - Inorganic Chemistry Laboratory Units: 2 15 - Introduction to Linear Algebra Units: 3 7 - Physics for Scientists and Engineers III Units: 4 ose one (1) additional course for a minimum of 3 units from the followin 25 - Environmental Chemistry Units: 4
□ UD-D Overlav □ Diver □ Socia □ Susta An addit major fo CHEM 4 CHEM 4 MATH 2 PHYS 13 Plus cho CHEM 4	y Requirements (9 units): Courses may be upper or lower division, and or major sity (Div) I Justice (51) inability (S) Additional Required Coursework tional 18 units minimum are required to complete the B.S. Chemistry or students NOT choosing the Bioanalytical and Forensics concentration: 55 - Physical Chemistry Laboratory Units: 2 10 - Advanced Inorganic Chemistry Units: 4 15 - Inorganic Chemistry Laboratory Units: 2 15 - Introduction to Linear Algebra Units: 3 7 - Physics for Scientists and Engineers III Units: 4 ose one (1) additional course for a minimum of 3 units from the followin