CATALOG TERM: 2024-2027 **TOTAL UNITS REQUIRED = 120**

CHEMISTRY

General Option

- This worksheet is intended for supplemental use only. The University will use your Academic Requirements Report (ARR) to track your graduation requirements, including those for your major. Please continue to check your ARR for accuracy. If your ARR requires a correction, please submit an ARR Correction Form.
- Your Degree Planner will display the following requirements in the University's recommended sequence.
- With the exception of CHEM 100, all courses used for the major and preparation for the major must be completed with a grade of C (2.0) or higher.
- All non-articulated courses MUST be reviewed and approved by a faculty advisor.
- A minimum of 24 units counted toward the Chemistry major must be completed at CSUSM.
- With suitable elective courses, students will earn a degree that is certified by the American Chemical Society.
- It is recommended you meet with a Chemistry faculty advisor to discuss career path and course suggestions.
- Course offerings are subject to change. Verify course availability with the Chemistry Department.

PREPARATION FOR THE CHEMISTRY OPTION (45 UNITS)

Lower-division Chemistry Courses (24 units):

✓	Course	Units
	CHEM 100: Introduction to the Chemistry and Biochemistry Major	1
	CHEM 150: General Chemistry (*MATH 101, 103, 105 or MATH Category 1 or 2)	4
	CHEM 150L: General Chemistry Laboratory (⁺CHEM 150)	1
	CHEM 162: Enhanced General Chemistry II (*CHEM 150, 150L and MATH 125, 126 or 160)	4
	CHEM 201: Organic Chemistry (*CHEM 160 or 162)	3
	CHEM 201L: Organic Chemistry Laboratory (⁺CHEM 201)	2
	CHEM 202: Organic Chemistry (*CHEM 201, 201L)	3
	CHEM 202L: Organic Chemistry Laboratory (CHEM 201, 201L, ⁺CHEM 202)	2
	CHEM 275: Quantitative Investigations in Chemistry (*MATH 160, CHEM 201L, ⁺CHEM 160 or 162)	4

Non-Chemistry Supporting Courses (21 units):

✓	Course	Units
	MATH 160: Calculus with Applications I (*MATH 125, 126 or pass Calculus Readiness Diagnostic)	5
	MATH 162: Calculus with Applications II (*MATH 160)	4
	MATH 260: Calculus with Applications III (*MATH 162)	4
	PHYS 201: Physics of Mechanics & Sound (*MATH 160)	4
	PHYS 202: Physics of Electromagnetism & Optics (*PHYS 201 or 205, and MATH 162)	4

OPTION REQUIREMENTS (36 UNITS)

Upper-division Chemistry Courses (29 units):

✓	Course	Units
	CHEM 300: Literature of Chemistry (*CHEM 201)	3
	CHEM 341: General Biochemistry (*CHEM 201)	3
	CHEM 401: Physical Chemistry-Classical (*CHEM 160 or 162 and MATH 162 and PHYS 202 or 206)	4

**prerequisite; ⁺pre-/co-requisite; ˜corequisite; ^course can be taken twice for a total of 4 units*

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	CHEM 402: Physical Chemistry-Quantum (*CHEM 160 or 162 and MATH 162 and PHYS 202 or 206)	3
	CHEM 404: Inorganic Chemistry (*CHEM 160 or 162 and CHEM 201; ˜CHEM 404L)	4
	CHEM 404L: Inorganic Chemistry Laboratory (⁺CHEM 404)	1
	CHEM 405: Physical Chemistry Laboratory (⁺CHEM 401; spring only)	2
	CHEM 416: Instrumental Methods of Analysis (*CHEM 202, 202L, 275, 300, PHYS 202)	5

Select 2 semesters of one of the following courses:

CHEM 498^: Senior Library Thesis and Seminar (*instructor consent)
CHEM 499^: Senior Laboratory Thesis and Seminar (*instructor consent)

✓	Course	Units
		2
		2

Upper-division Science Electives (7 units):
Choose 5 units from the pre-approved list below or you may consult with a Chemistry faculty advisor for additional options:

CHEM 308: Environmental Chemistry (3) (*CHEM 160, 201)
CHEM 450: Protein Structure and Function (3) (*CHEM 341 or 351; spring only)
CHEM 451: Biophysical Chemistry (3) (*CHEM 341, 351 and CHEM 401)
CHEM 490-494: Selected Topics (1-3) (*prerequisites vary)
MATH 346: Mathematical Methods for Physics (3) (*MATH 162; fall only)
PHYS 323: Quantum Physics (3) (*PHYS 203, ⁺MATH 346; fall only)
PHYS 324: Statistical Mechanics and Thermodynamics (3) (spring only)
Any 500-level CHEM course (1-3) (*prerequisites vary)

✓	Course	Units

**prerequisite; ⁺pre-/co-requisite; ˜corequisite; ^course can be taken twice for a total of 4 units*