Chemistry & Biochemistry Department
California State University, Long Beach
www.csulb.edu/chemistry

MINOR IN CHEMISTRY

Requirements Worksheet

Based on the **2022-2023 CSULB Catalog**.

This worksheet is not intended to replace advising from the Chemistry & Biochemistry Department. Students should consult with the undergraduate advisor to determine the appropriate course sequence. This worksheet informs students of minor requirements and course prerequisites only; the CSULB Catalog takes precedence in any conflict. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification.

The Chemistry minor is available to any non-Chemistry or Biochemistry major. The minimum nineteen units must include a minimum of six units of upper-division Chemistry courses.

Before adding minors, students must determine that their new plan conforms to CSULB's Timely Graduation for Undergraduate Students policy. Under this policy, students may earn up to 120% of the units required for their **declared primary major** degree and additional degree objectives (e.g., majors, minors, certificates, etc.). The policy also requires students to file a Request to Graduate with Enrollment Services by the time they complete 100% of the primary major's required units.

All prerequisites require a "C" or better. See the current catalog for more details.

The following courses are NOT accepted in the minor: CHEM 90, 100, 140, 224A, 224B, 301, 302, 304, 361, and 461.

Please complete the worksheet below and send a copy to an advisor to facilitate your request to add a Minor in Chemistry. Advisor appointments may be through ugrad-chem.advising@csulb.edu.

First Name: _____ Last Name: _____

CSULB ID #: _____ CSULB Email: _____

Date: _____

LOWER-DIVISION COURSES

General Chemistry

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 111A	General Chemistry (5)	Passing score on CPT or other measures. *Corequisite*: MATH 112A or higher
		CHEM 111B	General Chemistry (5)	CHEM 111A, and MATH 112B or 113 or 115 or 119A or 122

Organic Chemistry Paths

If you choose to take Organic Chemistry, you may take classes from only one of the two paths to meet the requirements of the minor.

Organic Path 1

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 227	Fundamentals of Organic Chemistry (3)	CHEM 111A; *Recommend*: CHEM 111B

Organic Path 2

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 220A	Organic Chemistry I (3)	CHEM 111B. *Corequisite*: CHEM 223A
		CHEM 220B	Organic Chemistry II (3)	CHEM 220A. *Corequisite*: CHEM 223B or 320L

Additional Eligible Lower-Division Chemistry & Biochemistry Courses

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 223A	Organic Chemistry Laboratory I (1)	*Pre/Corequisite*: CHEM 220A
		CHEM 223B	Organic Chemistry Laboratory II (1)	CHEM 220A and CHEM 223A. *Corequisite*: CHEM 223B
		CHEM 241	Explorations in Biochemistry (2)	BIOL 212. *Pre/Corequisite*: CHEM 220A
		CHEM 251	Quantitative Analysis (4)	CHEM 111B or 112B

UPPER-DIVISION COURSES

A minimum of six units are needed.

Physical Chemistry Paths

If you choose to take Physical Chemistry, you may take classes from only one of the following three paths to meet the requirements of the minor.

Physical Chemistry Path 1

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 371A	Thermodynamics and Kinetics (3)	CHEM 111B and MATH 123 and PHYS 152. *Pre/Corequisite*: MATH 224
		CHEM 371B	Quantum Mechanics & Spectroscopy (3)	CHEM 111B and MATH 123 and PHYS 152. *Pre/Corequisite*: MATH 224

Physical Chemistry Path 2

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 375	Physical Chemistry for Engineers (3)	MATH 123 and PHYS 151 and CHE 310; PHYS 152 or EE 210/EE 210L; CHEM 111A/B; CHEM 220A or 227

Physical Chemistry Path 3

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 379	Physical Chemistry for Biosciences (4)	(CHEM 111B or CHEM 112B), CHEM 220A, (MATH 119A or MATH 123), and (PHYS 100B or PHYS 152)

Biochemistry Paths

If you choose to take Biochemistry, you may take classes from only one of the following two paths to meet the requirements of the minor.

Biochemistry Path 1

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 441A	Biological Chemistry (3)	CHEM 220B; CHEM 320L or 223B
		CHEM 441B	Biological Chemistry (3)	CHEM 441A

Biochemistry Path 2

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 448	Fundamentals of Biological Chem. (3)	CHEM 220B or 227

Additional Eligible Upper-Division Chemistry & Biochemistry Courses

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 320L	Organic Chemistry Laboratory (2)	CHEM 220A. *Pre/Corequisite*: CHEM 220B
		CHEM 330	Bio-inorganic Chemistry (3)	CHEM 220B, CHEM 241
		CHEM 331	Inorganic Chemistry (3)	CHEM 111B or 112B
		CHEM 332	Inorganic Chemistry Laboratory (2)	CHEM 330 or CHEM 331
		CHEM 381	Special Topics in Spectroscopy (1)	(CHEM 111B or 112B), PHYS 152, (CHEM 112 or CHEM 112B or PHYS 320)
		CHEM 385	Materials Science (3)	CHEM 111A and PHYS 152
		CHEM 480	Biomolecular Modeling & Sim. (3)	(MATH 119B or MATH 123), (PHYS 100B or PHYS 152), (CHEM 220B or 227)

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 496	Undergrad. Directed Research (1-3)	Consent of Instructor (Typically one unit per semester). *Note: max of 3 units may be used to complete Minor in Chemistry.*

The courses below are also accepted but their prerequisites or corequisites alone would fulfill the minimal minor requirements.

Semester/Year	Grade	Course #	Course Title (units)	Prerequisites
		CHEM 373	Physical Chemistry Laboratory (3)	(CHEM 361 or ENGR 361), CHEM 371A, CHEM 371B
		CHEM 420	Advanced Organic Chemistry (3)	CHEM 220B, CHEM 320L
		CHEM 421	Physical Organic Chemistry (3)	CHEM 220B. *Pre/Corequisite*: CHEM 371B
		CHEM 431	Advanced Inorganic Chemistry (3)	CHEM 331. *Pre/Corequisite*: CHEM 371B
		CHEM 443	Biochemistry Laboratory (4)	CHEM 441A, (CHEM 361 or ENGR 361)
		CHEM 451	Instrumental Methods or Analysis (5)	PHYS 152, (CHEM 361 or ENGR 361), CHEM 371B