

BACHELOR OF SCIENCE IN CHEMISTRY

Major Requirements Worksheet

2018-2019 Catalog

NOTE: This checklist is not intended to replace advising from the major department. Students should consult with the major advisor to determine the appropriate sequence of courses. This checklist is to inform students of major requirements and course prerequisites only; the [CSULB Course Catalog](#) takes precedence in any conflict. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification.

Degree Progress

Freshman need to complete MATH 122 and CHEM 111A within one calendar year, and CHEM 111B and CHEM 220A within two calendar years, all with a grade of "C" or better. Transfer students need to complete CHEM 220A and PHYS 151 within one calendar year, all with a grade of "C" or better.

Many prerequisites require a "C" or better; please check the course catalog for grade requirements.

Take ALL of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 220A	Organic Chemistry I (3)	CHEM 111B
		CHEM 220B	Organic Chemistry II (3)	CHEM 220A. <i>Corequisite:</i> CHEM 320L
		MATH 122	Calculus I (4)	Appropriate algebra/calculus placement; or MATH 111 and either MATH 112B or 113
		MATH 123	Calculus II (4)	MATH 122
		MATH 224	Calculus III (4)	MATH 123 or 222
		PHYS 151	Mechanics and Heat (4)	<i>Pre/Corequisite:</i> MATH 122 or 123 or 224
		PHYS 152	Electricity and Magnetism (4)	PHYS 151. <i>Pre/Corequisite:</i> MATH 123

Take ONE of the following groups:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 111A +	General Chemistry (5);	Passing score on CPT or other measures. <i>Pre/Corequisite:</i> MATH 112A or higher; CHEM 111A, and MATH 112B or higher
		CHEM 111B	General Chemistry (5)	
		CHEM 112A +	Adv. General Chemistry (5);	Department consent; CHEM 112A
		CHEM 112B	Adv. General Chemistry (5)	

Take either (BIOL 211 and 212):

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 211	Introduction to Evolution and Diversity (4)	<i>Pre/Corequisite:</i> CHEM 111A
		BIOL 212	Introduction to Cell and Molecular Biology (4)	BIOL 211 and CHEM 111A. <i>Pre/Corequisite:</i> CHEM 111B

OR ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 200	General Biology (4)	GE Foundation
		BIOL 205	Human Biology (4)	GE Foundation
		BIOL 207	Human Physiology (4)	GE Foundation

Take CHEM 251 or 4 units of elective chosen in consultation with an advisor:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 251	Quantitative Analysis (4)	CHEM 111B

UPPER DIVISION COURSES (see major faculty advisor)**Take ALL of the following courses:**

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 320L	Organic Chemistry Lab. (2)	CHEM 220A; <i>Corequisite:</i> CHEM 220B
		CHEM 331	Inorganic Chemistry (3)	CHEM 111B
		CHEM 332	Inorganic Chemistry Lab. (2)	CHEM 331
		CHEM 361	Chemical Communications (3)	GE Foundation requirement. 11 or higher on GVAR. <i>Pre/Corequisite:</i> CHEM 220A
		CHEM 371A	Thermodynamics and Kinetics (3)	CHEM 111B and MATH 123 and PHYS 152. <i>Pre/Corequisite:</i> MATH 224
		CHEM 371B	Quantum Mechanics and Spectroscopy (3)	CHEM 111B and MATH 123 and PHYS 152. <i>Pre/Corequisite:</i> MATH 224
		CHEM 373	Physical and Inorganic Chemistry Laboratory (3)	CHEM 361; CHEM 371A and 371B (one may be taken concurrently)
		CHEM 431	Adv. Inorganic Chemistry (3)	CHEM 331 and 371B
		CHEM 451	Instrumental Methods of Analysis (5)	PHYS 152; CHEM 361 or NSCI 361; CHEM 371B or 377B
		CHEM 461	Chemistry Capstone (1)	Department consent

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 441A	Biological Chemistry (3)	CHEM 220B; CHEM 320L or 223B. <i>Recommend:</i> BIOL or MICR course
		CHEM 448	Fundamentals of Biological Chemistry (3)	CHEM 220B

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 420	Adv. Organic Chemistry Lab. (3)	CHEM 220B and 320L; CHEM 361 or NSCI 361
		CHEM 498	Senior Thesis	Major GPA 3.0 or higher, 3 units of CHEM 496 with a grade of "A", instructor consent

Choose an additional THREE units of upper division chemistry electives:

Include at least one unit of CHEM 496. RSCH 496A, CHE 330, CHE 430, or CHE 475 may be used as chemistry electives.

Semester	Grade	Course #	Course Title	Prerequisites

Students are also advised to take one or more additional courses in mathematics, such as MATH 247, 364A, 370A, 380.