

BACHELOR OF SCIENCE IN BIOCHEMISTRY

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
		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
		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
		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.
		CHEM 111B	General Chemistry (5)	<i>Pre/Corequisite:</i> MATH 112A or higher; CHEM 111A, and MATH 112B or higher
		CHEM 112A + CHEM 112B	Adv. General Chemistry (5); Adv. General Chemistry (5)	Department consent; CHEM 112A

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
		BIOL 340	Molecular Cell Biology (3)	BIOL 211 and 212
		CHEM 320L	Organic Chemistry Laboratory (2)	CHEM 220A. <i>Corequisite</i> : CHEM 220B
		CHEM 361	Chemical Communications (3)	GE Foundation requirement. 11 or higher on GWAR. <i>Pre/Corequisite</i> : CHEM 220A
		CHEM 441A	Biological Chemistry (3)	CHEM 220B; CHEM 320L or 223B. <i>Recommend</i> : a BIOL or MICR course.
		CHEM 441B	Biological Chemistry (3)	CHEM 441A
		CHEM 443	Biological Chemistry Lab. (4)	CHEM 441A and 361
		CHEM 461	Chemistry Capstone (1)	Department consent

Take **ONE** of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 371A	Thermodynamics and Kinetics (3)	CHEM 111B and MATH 123 and PHYS 152. <i>Pre/Corequisite</i> : MATH 224
		CHEM 377A	Fundamentals of Physical Chemistry (3)	CHEM 111B and MATH 123 and PHYS 152

Take **ONE** of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 371B	Quantum Mechanics and Spectroscopy (3)	CHEM 111B and MATH 123 and PHYS 152. <i>Pre/Corequisite</i> : MATH 224
		CHEM 377B	Fundamentals of Physical Chemistry (3)	CHEM 111B and MATH 122 and PHYS 152

Take **ONE** of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 420	Advanced Organic Chemistry Lab (3)	CHEM 220B and 320L; CHEM 361 or NSCI 361
		CHEM 451	Instrumental Methods of Analysis (5)	PHYS 152; CHEM 361 or NSCI 361; CHEM 371B or 377B

Take at least **THREE** units of elective chosen from:

BIOL 342+342L, 370, 416, 430, 431, 432, 433, 443, 445, 473; CHEM 331, 332, 373, 385, 385C, 385L, 420, 421, 431, 451, 480, 496, 498; 498H, 499; RSCH 496A

Semester	Grade	Course #	Course Title	Prerequisites