

BACHELOR OF SCIENCE IN BIOLOGY

Option in Biology Education 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

Pre-Biology majors must complete CHEM 111A, BIOL 211, and MATH 119A or 122 within one and a half calendar years of declaring the pre-major. Some students may need to take courses during Summer Session to meet these requirements.

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
		ASTR 100	Astronomy (3)	Corequisite: One course from GE B2, and ASTR 100L
		BIOL 211	Introduction to Evolution and Diversity (4)	Pre/Corequisite: CHEM 111A
		BIOL 212	Introduction to Cell and Molecular Biology (4)	BIOL 211 and CHEM 111A. Pre/Corequisite: CHEM 111B
		BIOL 213	Introduction to Ecology and Physiology (4)	BIOL 211 and 212 and CHEM 111B
		BIOL 260	Biostatistics (3)	BIOL 211 or 207 or MICR 200; MATH 111 or 113 or 119A or 122
		CHEM 111A	General Chemistry (5)	Passing score on CPT or other measures; MATH 112A or higher
		CHEM 111B	General Chemistry (5)	CHEM 111A, and MATH 113 or 115 or 119A or 122

Choose ONE of the following groups:

Semester	Grade	Course #	Course Title	Prerequisites
		GEOL 102 + GEOL 104	General Geology (3); Geology Laboratory (1)	Pre/Corequisite: GE A1 requirement, H.S. math; Pre/Corequisite: GE A1 requirement, H.S. math, GEOL 102
		GEOL 106	Earth Science for Teachers (4)	Pre/Corequisite: A course that fulfills GE A1, H.S. math

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 119A	Survey of Calculus I (3)	Appropriate calculus placement; or MATH 112B or 113
		MATH 122	Calculus I (4)	Appropriate algebra/calculus placement; or MATH 111 and either MATH 112B or 113

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 201	General Microbiology for Health Professionals (4)	CHEM 111A or 140; GE Foundation requirements
		BIOL 311	General Microbiology (4)	BIOL 211 and 212; CHEM 111B

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 100A	General Physics (4)	MATH 109 or 111 or 112A or 113 or 119A or 122

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 151	Mechanics and Heat (4)	<i>Pre/Corequisite:</i> MATH 122 or 123 or 224

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 100B	General Physics (4)	PHYS 100A
		PHYS 152	Electricity and Magnetism (4)	PHYS 151. <i>Pre/Corequisite:</i> MATH 123

Choose either CHEM 227:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 227	Fundamentals of Organic Chemistry (3)	CHEM 111A; <i>Recommend:</i> CHEM 111B

OR the following FOUR courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 220A	Organic Chemistry I (3)	CHEM 111B. <i>Corequisite:</i> CHEM 223A
		CHEM 220B	Organic Chemistry II (3)	CHEM 220A. <i>Corequisite:</i> CHEM 223B or 320L
		CHEM 223A	Organic Chemistry Lab. I (1)	<i>Corequisite:</i> CHEM 220A
		CHEM 223B	Organic Chemistry Lab. II (1)	CHEM 220A and 223A. <i>Corequisite:</i> CHEM 220B

UPPER DIVISION COURSES (see major faculty advisor)

Take ALL of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		SCED 404	The Nature of Science and Scientific Reasoning for Teachers (3)	Minimum of 9 units of science (introductory level or higher) or instructor consent
		BIOL 312	Evolutionary Biology (3)	BIOL 211 and 212 and 213 and 260
		BIOL 340	Molecular Cell Biology (3)	BIOL 211 and 212
		BIOL 350	General Ecology (3)	BIOL 211 and 212 and 213 and 260; MATH 119A or 122.
		BIOL 370	General Genetics (4)	BIOL 211 and 212; BIOL 260 or CHEM 251
		BIOL 480	Seminars (1)	Department consent

Choose ONE of the following courses in plant diversity:

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 427	Vascular Plant Systematics (4)	BIOL 312 or 370
		BIOL 439	Plant Morphology (4)	BIOL 312 or 370

Choose ONE of the following courses in animal diversity:

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 313	Invertebrate Zoology (4)	BIOL 211 and 212 and 213 and instructor consent
		BIOL 316	General Entomology (4)	BIOL 211 and 212 and 213
		BIOL 324	Vertebrate Zoology (4)	BIOL 211 and 212 and 213

Choose ONE of the following courses in physiology:

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 345	Comparative Animal Physiology (3)	BIOL 211 and 212 and 213
		BIOL 447	Molecular Plant Physiology (3)	BIOL 340 and 370

The remaining biological sciences course (3 units) should be chosen in consultation with an advisor; BIOL 495 is highly recommended. Either CHEM 441A, 441B or 448 will count toward this additional required course. Students may use BIOL 496 as one of the nine required upper division courses but only with prior permission of the advisor for this option BIOL 300, 301, 304, 305, and NSCI 492 do not meet any specific or elective requirements for this major. Although SCED 403 and EDSS 300A-S (C) are not required in the major, the credential does require these courses. Students may want to take some or all of them prior to graduation.