

BACHELOR OF SCIENCE IN MICROBIOLOGY

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-Microbiology 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
		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
		BIOL 260	Biostatistics (3)	BIOL 211 or 207 or MICR 200; MATH 111 or 112B or 113 or 119A or 122
		CHEM 111A	General Chemistry (5)	Passing score on the CPT or other measures. <i>Corequisite:</i> MATH 112A or higher
		CHEM 111B	General Chemistry (5)	CHEM 111A, and MATH 112B or higher
		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 (3)	CHEM 220A and 223A. <i>Corequisite:</i> CHEM 220B

Take 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 calculus placement; or MATH 111 and either MATH 112B or 113

Take ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 100A	General Physics (4)	MATH 109 or 112A or 113 or 119A or 122
		PHYS 151	Mechanics and Heat (4)	<i>Pre/Corequisite:</i> MATH 122 or 123 or 224

Take ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		PHYS 100B	General Physics (4)	PHYS 100A and MATH 109 or 111 or 112A or 113 or 119A or 122
		PHYS 152	Electricity and Magnetism (4)	PHYS 151. <i>Pre/Corequisite</i> : MATH 123

These lower division courses do not meet any specific or elective requirements for this major: BIOL 101, 153, 153L, 200, 200L, 201, 205, 205L, 207, 208.

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

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 311	General Microbiology	BIOL 211 and BIOL 212 and CHEM 111B
		BIOL 320	Bacterial Pathogenesis (3)	BIOL 311 or MICR 311; <i>Recommend</i> : BIOL 320L
		BIOL 340	Molecular Cell Biology (3)	BIOL 211 and 212
		BIOL 355	Microbial Ecology (3)	BIOL 260; BIOL 311 or MICR 211 or (BIOL 211 and 212 and 213)
		BIOL 371	Microbial Genetics (3)	BIOL 311 or MICR 211
		BIOL 372	Methods in Microbial Genetics (2)	BIOL 311; <i>Recommend</i> : BIOL 371
		BIOL 471	Bacterial Physiology (3)	BIOL 320 or MICR 320, CHEM 441 or 448
		BIOL 480	Seminars (1)	Department consent

Take ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 448	Fundamentals of Biological Chemistry (3)	CHEM 220B or CHEM 227
		CHEM 441A	Biological Chemistry (3)	CHEM 220B and either CHEM 320L or 223B

Take FOUR courses totaling at least 12 elective units:

Choose from the following: BIOL 320L, 322, 325, 355L, 415, 416, 429, 430, 434, 473, 474, 477; 490, 495, and CHEM 441B, **one of which must be BIOL 320L, 322, 355L, 415, 434, 474, or 477**. Students may use BIOL 496 towards the additional units but *only* with prior permission of the advisor for this degree. Those students seeking a career as a **Clinical Laboratory Scientist/Medical Technologist** are encouraged to take BIOL 320L, 416, 423, 430.

Semester	Grade	Course #	Course Title	Prerequisites

These courses do not meet any specific or elective requirements for this major: BIOL 300, BIOL 301, BIOL 304, BIOL 305; and NSCI 492.