

# BACHELOR OF SCIENCE IN MICROBIOLOGY (IMPACTED)

## Major Requirements Worksheet

### 2016-2017 Catalog

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

**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. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification. **Pre-Biology majors must complete their GE Foundation courses, and the highlighted areas below all with a “C” or better and a cumulative GPA of 2.5, by 60 units to be considered for the major.**

#### 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. Students who have not met the requirements by the required semester must either declare another major or meet with an Academic Advisor to determine if the student's performance in the courses merits an additional semester to complete.

ALL Biology Department courses require a “C” or better on prerequisites.

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 211	Intro. to Evolution and Diversity (4)	Pre/Corequisite: CHEM 111A
		BIOL 212	Intro. to Cell and Molecular Biology (4)	BIOL 211 and CHEM 111A; Pre/Corequisite: CHEM 111B
		BIOL 260	Biostatistics (3)	BIOL 211 or BIOL 207 or MICR 200; MATH 111 or 113 or 119A or 122
		BIOL 311	General Microbiology	BIOL 211, BIOL 212; CHEM 111B
		CHEM 111A	General Chemistry (5)*	A passing score on the CPT; Corequisite: MATH 109 or higher
		CHEM 111B	General Chemistry (5)	CHEM 111A and MATH 113 or 115 or 119A or 122
		CHEM 220A	Organic Chemistry I (3)	CHEM 111B. Corequisite: CHEM 223A
		CHEM 220B	Organic Chemistry II (3)	CHEM 220A Corequisite: CHEM 223B or 320L
		CHEM 223A	Organic Chemistry Laboratory I (1)*	Corequisite: CHEM 220A
		CHEM 223B	Organic Chemistry Laboratory II (1)*	CHEM 220A, 223A. Corequisite: CHEM 220B

\*See exception or clarification in the catalog

#### Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 119A	Survey of Calculus I (3) <b>OR</b>	MDPT placement* or MATH 113
		MATH 122	Calculus I (4)	MDPT placement* or MATH 111 and 113

\*See exception or clarification in the catalog

#### Choose ONE of the following courses:

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

#### Choose ONE of the following courses:

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

## UPPER DIVISION COURSES (See major faculty advisor)

### Take ALL of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 320	Bacterial Pathogenesis (3)	BIOL 311; Recommended: BIOL 320L
		BIOL 340	Molecular Cell Biology (3)	BIOL 211, 212
		BIOL 355	Microbial Ecology (3)	BIOL 311 or BIOL 211, 212, 213, 260
		BIOL 371	Microbial Genetics (3)	BIOL 311
		BIOL 372	Methods in Microbial Genetics (2)	BIOL 311; Recommended: BIOL 371
		BIOL 471	Bacterial Physiology (3)	BIOL 320 <i>and</i> CHEM 448 or 441A
		BIOL 480	Seminars (1)	Consent of the department. Undergraduates must have filed for graduation and be in their last semester.

### Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 448	Biological Chemistry Survey (3) <b>OR</b>	Either CHEM 220B or CHEM 227
		CHEM 441A	Biological Chemistry (3)	Either CHEM 220B or CHEM 223B. Recommended: a biology course.

### Choose a *minimum* of 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, 430, 434 and CHEM 251 (note: CHEM 251 does not count toward Microbiology B.S.)

Semester	Grade	Course #	Course Title	Prerequisites

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