



BACHELOR OF SCIENCE IN BIOLOGY OPTION IN BIOLOGY EDUCATION FOUR YEAR DEGREE WORKSHEET 2019-2020 Catalog

This degree worksheet is intended to help you develop a balanced course schedule while completing your degree within 4 years. The same sequence of courses (with fewer courses each semester) is also recommended for students completing their degree in 5 or 6 years. This worksheet is not intended to replace academic advising with your assigned advisor. Students should consult with their assigned advisor to determine the appropriate sequence of required courses and electives based on their academic goals. Please note that your Major Specific Requirements (MSRs) are **bolded** in the document and are also listed as an “MSR” in the notes column. These courses must be completed in order to declare your major. **All students must have a GPA of 2.5 or higher in the STEM MSR suite.**

Pre-Biology first-time freshmen must complete CHEM 111A and MATH 119A or higher **within one year of matriculation**. 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.

CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification.

Year 1

Semester	Course #	Course Title (Units)	Prerequisites	Notes
1	CHEM 111A	General Chemistry (5)	Appropriate Placement, Pre/Corequisite: MATH 112A or 112B or higher, CHEM 95 if needed	MSR
	MATH 119A (area B4)	Survey of Calculus I (3)	Appropriate placement, MATH 112B or 113	MSR
	GE (area A2)	Written Communication (3)		MSR
	GE (area C,D,E)	Other Exploration (3)		
	NSCI 190A	Experience Success Program 1 (1)		Fall
2	CHEM 111B	General Chemistry (5)	CHEM 111A or 112A, MATH 112B or higher	MSR
	BIOL 211	Intro. to Evolution and Diversity (4)	Pre/Corequisite: CHEM 111A or 112A	MSR
	GE (area A1)	Oral Communication (3)		MSR
	GE (area A3)	Critical Thinking (3)		MSR

Year 2

Semester	Course #	Course Title (Units)	Prerequisites	Notes
3	CHEM 227; OR CHEM 220A	Fundamentals of Organic; OR Organic Chemistry I (3)	CHEM 111A or 112A; OR CHEM 111B or 112B, <i>Corequisite:</i> CHEM 223A	CHEM 227 usually recommended
	CHEM 223A (if 220A taken)	Organic Chemistry Lab. I (1)	CHEM 111B, <i>Pre/Corequisite:</i> CHEM 220A	
	BIOL 212	Intro. to Cell and Molecular Biology (4)	BIOL 211, CHEM 111A or 112A, <i>Pre/Corequisite:</i> CHEM 111B or 112B	
	BIOL 260	Biostatistics (3)	BIOL 211, MATH 111, 113, 119A, or 122	
	GE (area C,D,E)	Other Exploration (3)		
4	CHEM 220B (if 220A taken)	Organic Chemistry II (3)	CHEM 220A, <i>Corequisite:</i> CHEM 223B	
	CHEM 223B (if 220B taken)	Organic Chemistry Lab. II (1)	CHEM 220A and 223A, <i>Pre/Corequisite:</i> CHEM 220B	
	BIOL 213	Intro. to Ecology and Physio. (4)	BIOL 211, 212, CHEM 111B or 112B	
	ASTR 100	Astronomy (3)	MATH 119A or 122	
	BIOL 340	Molecular Cell Biology (3)	BIOL 211, 212	
	GE (area C,D,E)	Other Exploration (3)	GE (area C, D, and E)	

Year 3

Semester	Course #	Course Title (Units)	Prerequisites	Notes
5	BIOL 312	Evolutionary Biology (3)	BIOL 211, 212, 213, and 260	
	GEOL 102 & GEOL 104 OR GEOL 106	General Geology (3) & Geology Lab (1) OR Earth Science for Teachers (4)	<i>Corequisite:</i> GEOL 104 & <i>Corequisite:</i> GEOL 102 OR GE Written Communication (A2)	
	BIOL 201; OR BIOL 311	General Microbiology for Health Professionals (4); OR General Microbiology (4)	CHEM 111A, GE Foundation OR BIOL 211 and 212, CHEM 111B or 112B	
	GE (area C,D,E)	Other Exploration (3)	GE (area C, D, and E)	
	GE (area C,D,E)	Other Exploration (3)	GE (area C, D, and E)	
	GE (area C,D,E)	Other Exploration (3)	GE (area C, D, and E)	

Semester	Course #	Course Title (Units)	Prerequisites	Notes
6	BIOL 370	General Genetics (4)	BIOL 211, 212, and 260	
	PHYS 100A; OR PHYS 151	General Physics (4); OR Mechanics and Heat (4)	MATH 109, 111,112A, 113, 119A, or 122; OR <i>Pre/Corequisite:</i> MATH 122, 123, or 224	
	BIOL 350	General Ecology (3)	BIOL 211, 212, 213, 260, MATH 119A or 122	
	GE Upper Division (area B-UD, C-UD, D-UD)	Upper Division (3)	GE Foundation	

Year 4

Semester	Course #	Course Title (Units)	Prerequisites	Notes
7	PHYS 100B; OR PHYS 152	General Physics (4); OR Electricity and Magnetism (4)	PHYS 100A or 151, MATH 109, 111, 112A, 113, 119A, or 122; OR PHYS 151; <i>Pre/Corequisite:</i> MATH 123	
	BIOL 345; OR BIOL 447	Comparative Animal Physiology (3); OR Molecular Plant Physiology (3)	BIOL 211, 212 and 213; OR BIOL 340 and 370	Spring Only (BIOL 447)
	BIOL 427; OR BIOL 439	Vascular Plant Systematics (4); OR Plant Morphology (4)	BIOL 312 or 370	Spring Fall
	GE (area C,D,E)	Other Exploration (3)	GE (area C, D, and E)	
8	Elective	Biology Education Animal Diversity Course (4)	BIOL 211, 212, and 213	
	SCED 404	The Nature of Science and Scientific Reasoning for Teachers (3)	minimum of 9 units of science or consent of instructor	
	Elective	Biology Education Approved Upper Division Elective (3)		
	BIOL 480	Seminars (1)	take in last semester, department consent required	
	GE (area C,D,E)	Other Exploration (3)	GE (area C, D, and E)	