BACHELOR OF SCIENCE IN BIOLOGY (IMPACTED)
Option in Biology Education Major Requirements Worksheet
2014-2015 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.

Semester	Grade	Course #	Course Title	Prerequisites *ALL Biology Department courses require a "C" or better.*
		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 213	Intro. to Ecology and Physiology (4)	BIOL 211, 212 *and* CHEM 111B
		ASTR 100	Astronomy (3)	*Corequisite*: One course from GE Category B2 *and* ASTR 100L
		BIOL 153	Intro. To Marine Biology (3)	Courses that fulfill the A1 and B2 GE requirements
		BIOL 260	Biostatistics (3)	BIOL 211 or BIOL 207 or MICR 200; MATH 111 or 113 or 119A or 122
		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

Select ONE course from each block:

		MATH 119A MATH 122	Survey of Calculus I (3) ***OR*** Calculus I (4)	MDPT placement* or MATH 113 MDPT placement* *or* MATH 111 *and* 113.
		MICR 200 MICR 211	Gen. Microbiology for Health Professionals (4) ***OR*** General Microbiology (5)	CHEM 111A *or* 140 *and* GE Foundation requirements BIOL 211, 212; CHEM 111B
		PHYS 100A PHYS 151	General Physics (4) ***OR*** Mechanics and Heat (4)	MATH 109 *or* 113 *or* 119A *or* 122 *Pre/Corequisite*: MATH 122
		PHYS 100B PHYS 152	General Physics (4) ***OR*** Electricity and Magnetism (4)	PHYS 100A PHYS 151; *Pre/Corequisite*: MATH 123

Select ONE of the two options:

		GEOL 102 GEOL 104	General Geology (3) ***AND*** Geology Laboratory (1)	*Pre/Corequisite*: A course that fulfills the A1 GE requirement* *Pre/Corequisite*: - A course that fulfills the A1 GE requirement* and GEOL 102
		GEOL 106	Earth Science for Teachers (4)	*Pre/Corequisite*: A course that fulfills the A1 GE requirement*

Take CHEM 227 or ALL of the following CHEM 220A, CHEM 220B, CHEM 223A, and CHEM 223B.

		CHEM 227	Fundamentals of Organic Chemistry (3)	CHEM 111A; CHEM 111B recommended *(formerly CHEM 327)*

NOTE: See the catalog for courses that do not meet any specific or elective requirements for the major
* See exception or clarification in the catalog

OR

		CHEM 220A	Organic Chemistry I (3) (*lab required same semester)	CHEM 111B. Must be taken concurrently with CHEM 223A.
		CHEM 220B	Organic Chemistry II (3) (*lab required same semester)	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 *and* CHEM 223A *Corequisite:* CHEM 220B

UPPER DIVISION COURSES (See major faculty advisor)

Take the following course:

		SCED 404	The Nature of Science and Scientific Reasoning for Teachers (3)	At least three-fourths of the credential specialization courses for Single Subject Teaching Credential in science and consent of instructor. (SP term only)

Take ALL of the following courses:

		BIOL 312	Evolutionary Biology (3)	BIOL 211, 212, 213, 260
		BIOL 340	Molecular Cell Biology (3)	BIOL 211, 212
		BIOL 350	General Ecology (3)*	BIOL 211, 212, 213, 260; MATH 119A or 122.
		BIOL 370	General Genetics (4)	BIOL 211, 212, and either BIOL 260 or CHEM 251
		BIOL 480	Seminars (1)	Consent of the department. Undergraduates must have filed for graduation and be in their last semester.

One of the following courses in plant diversity*:*

		BIOL 427	Vascular Plant Systematics (4) ***OR***	BIOL 312 or 370 (SP term only)
		BIOL 439	Plant Morphology (4)	BIOL 312 or 370 (FA term only)

One of the following courses in plant diversity*:*

		BIOL 313	Invertebrate Zoology (4) ***OR***	BIOL 211, 212, 213 and instructor consent (FA term only)
		BIOL 316	General Entomology (4) ***OR***	BIOL 211, 212, 213
		BIOL 324	Vertebrate Zoology (4)	BIOL 211, 212, 213

One of the following courses in physiology:

		BIOL 345	Comparative Animal Physiology (3) ***OR***	BIOL 211, 212, 213
		BIOL 447	Molecular Plant Physiology (3)	BIOL 340 and 370 (SP term only)

The remaining biological sciences course should be chosen in consultation with an advisor; BIOL 495/MICR 495 is highly recommended. Either CHEM 441A, CHEM 441B or CHEM 448 will count toward this additional required course. Students may use BIOL or MICR 496 as one of the nine required upper division courses but only with prior permission of the advisor for this option. BIOL 301, BIOL 304, BIOL 305; MICR 300; and NSCI 492 do not meet any specific or elective requirements for this major.

NOTE: See the catalog for courses that do not meet any specific or elective requirements for the major

* See exception or clarification in the catalog