BACHELOR OF SCIENCE IN BIOLOGY (IMPACTED)
Option in Biology Education Major Requirements Worksheet
2012-2013 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.*

Grade	Course #	Course Title	Semester	**Prerequisites** *(ALL Biology Department courses require a "C" or better in every pre-requisite course)*
	BIOL 153	Introduction to Marine Biology (3)		Courses that fulfill the A.1 *and* B.2 GE requirements (can be a Corequisite)
	BIOL 211	Introduction to Evolution and Diversity (4)		CHEM 111A (can also be a Corequisite)
	BIOL 212	Introduction to Cell and Molecular Biology (4)		BIOL 211 *and* CHEM 111A*
	BIOL 213	Introduction to Ecology and Physiology (4)		BIOL 211, 212 *and* CHEM 111B*
	BIOL 260	Biostatistics (3)		BIOL 211 *or* BIOL 207 *or* MICR 200*; MATH 111* *or* 113* *or* 119A* *or* 122*
	ASTR 100	Astronomy (3)		Corequisite one course from GE Category B.2 *and* ASTR 100L
	CHEM 111A	General Chemistry (5)**		A passing score on the CPT; MATH 113* *or* 117* *or* 119A* *or* 122*
	CHEM 111B	General Chemistry (5)		CHEM 111A*

Take ONE course from EACH block:
Choose EITHER GEOL 106 or GEOL 102 *and* 104

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

Choose ONE

	MATH 119A	Survey of Calculus I (3) OR		Appropriate MDPT placement or MATH 113*
	MATH 122	Calculus I (4)		Appropriate MDPT placement *or* MATH 111* *and* 113*, *or* 117*

Choose ONE

	MICR 200	General Microbiology for Health Professionals (4) OR		CHEM 111A* *or* 140* *and* GE Foundation requirements
	MICR 211	General Microbiology (5)		BIOL 211, 212; CHEM 111B*

Choose ONE

	PHYS 100A	General Physics (4) OR		MATH 109 *or* 113 *or* 117 *or* 119A *or* 120 *or* 122
	PHYS 151	Mechanics and Heat (4)		MATH 122 (can also be a pre/corequisite)

Choose ONE

	PHYS 100B	General Physics (4) OR		PHYS 100A
	PHYS 152	Electricity and Magnetism (4)		PHYS 151; Pre/corequisite MATH 123

Upper Division (for upper division course advising, please see your major faculty advisor).
Take EITHER CHEM 327, OR all four (CHEM 322A, 323A, 322B, 323B)

* Must receive a **"C"** or better ** See exception or clarification in the catalog
NOTE: See catalog for courses that do not meet specific or elective requirements for the major

Updated 12/10/12 LM

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	CHEM 327	Fundamentals of Organic Chemistry (3)		CHEM 111A* (CHEM 111B is recommended)
	CHEM 322A	Organic Chemistry (3)		CHEM 111B* (lab CHEM 323B **required** same semester**)
	CHEM 323A	Organic Chemistry Laboratory (1)**		CHEM 111B*
	CHEM 322B	Organic Chemistry (3)		CHEM 322A* *and* CHEM 323A* (lab **required** same time**)
	CHEM 323B	Organic Chemistry Laboratory (1)**		CHEM 322A* *and* CHEM 323A*

Take the following course:

	SCED 404	The Nature of Science and Scientific Reasoning for Teachers (3)		Completion of at least three fourths of the credential specialization courses for the Single Subject Teaching Credential in science and consent of instructor

Take at least 9 courses totaling at least 26-29 units in biological science including:
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; CHEM 320A* or 322A* or 327*
	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)		Taken the semester the student is going to graduate and with the consent of undergraduate advisor

Take ONE of the following courses in physiology:

	BIOL 345	Comparative Animal Physiology (3)		BIOL 211, 212, 213
	BIOL 447	Molecular Plant Physiology (3)		BIOL 340 and 370

Take ONE of the following courses in plant diversity:

	BIOL 427	Vascular Plant Systematics (4)		BIOL 312 or 370
	BIOL 439	Plant Morphology (4)		BIOL 312 or 370

Take ONE of the following courses in animal diversity:

	BIOL 313	Invertebrate Zoology (4)		BIOL 211, 212, 213
	BIOL 316	General Entomology (4)		BIOL 211, 212, 213
	BIOL 324	Vertebrate Zoology (4)		BIOL 211, 212, 213

The remaining biological science courses should be chosen in consultation with an advisor; BIOL 495/MICR 495 is highly recommended. Either CHEM 441A, B, or 448 will count toward this additional required course. Students may also use BIOL or MICR 496 as 1 of the 9 required upper division courses but *only* with prior permission of the advisor for this option. Prospective Biology teachers are also required to take 44 units of professional preparation in the Single Subject Credential Program – see advisor.

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