

BACHELOR OF SCIENCE IN BIOLOGY (IMPACTED)

Option in Biology Education Major Requirements Worksheet

2015-2016 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 <i>ALL Biology Department courses require a "C" or better.</i> |
|----------|-------|-----------|--|---|
| | | 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 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:

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

Select ONE of the two options:

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|--|--|----------|--------------------------------|---|
| | | GEOL 102 | General Geology (3) AND | Pre/Corequisite: A course that fulfills the A1 GE requirement* |
| | | GEOL 104 | Geology Laboratory (1) | 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.

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

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

Updated 5/20/15

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| | | 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 <i>Corequisite:</i> CHEM 223B or 320L |
| | | CHEM 223A | Organic Chemistry Laboratory I (1)* | <i>Corequisite:</i> CHEM 220A |
| | | CHEM 223B | Organic Chemistry Laboratory II (1)* | CHEM 220A and CHEM 223A <i>Corequisite:</i> CHEM 220B |

UPPER DIVISION COURSES (See major faculty advisor)

Take the following course:

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| | | 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) |
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Take ALL of the following courses:

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| | | 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:

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

One of the following courses in plant diversity:

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| | | BIOL 313 | Invertebrate Zoology (4) OR | BIOL 211, 212, 213 and instructor consent |
| | | 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:

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

The remaining biological sciences course (3 units) 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. With prior permission of the advisor for this option, students may use a total of 3 units of any combination of BIOL/MICR 495 (2 units max) and/or BIOL/MICR 496 (3 units max) as an elective. BIOL 301, BIOL 304, BIOL 305; MICR 300; and NSCI 492 do not meet any specific or elective requirements for this major.

Although SCED 403 and EDSS 300C are not required in the major, the credential does require these courses. Students may want to take some or all of them prior to graduation.

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