# BACHELOR OF SCIENCE IN BIOLOGY (IMPACTED)
## Option in Molecular Cell Biology and Physiology (MCBP) Major Requirements Worksheet
## 2013-2014 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 211 | Introduction to Evolution and Diversity (4) | | CHEM 111A pre/corequisite |
| | BIOL 212 | Introduction to Cell and Molecular Biology (4) | | BIOL 211 *and* CHEM 111A; CHEM 111B pre/corequisite |
| | BIOL 213 | Introduction to Ecology and Physiology (4) | | BIOL 211, 212 *and* CHEM111B |
| | 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; MATH 113 or 117 or 119A or 122 |
| | CHEM 111B | General Chemistry (5) | | CHEM 111A |

**Take ONE course from EACH block:**

| | | | | |
|---|---|---|---|---|
| | MATH 119A<br>MATH 122 | Survey of Calculus I (3) OR<br>Calculus I (4) | | MDPT placement* or MATH 113<br>MDPT placement* or MATH 111 and 113, or MATH 117 |
| | MATH 119B<br>MATH 123 | Survey of Calculus II (3) OR<br>Calculus II (4) | | MATH 119A or 122<br>MATH 122 |
| | PHYS 100A<br>PHYS 151 | General Physics (4) OR<br>Mechanics and Heat (4) | | MATH 109 or 113 or 117 or 119A or 120 or 122<br>MATH 122 pre/corequisite |
| | PHYS 100B<br>PHYS 152 | General Physics (4) OR<br>Electricity and Magnetism (4) | | PHYS 100A<br>PHYS 151; MATH 123 pre/corequisite |

**Upper Division** (for upper division advising, see your faculty advisor)
**Take all of the following courses:**

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|---|---|---|---|---|
| | CHEM 322A | Organic Chemistry (3) (lab required same semester*) | | CHEM 111B |
| | CHEM 323A | Organic Chemistry Laboratory (1)* | | CHEM 111B |
| | CHEM 322B | Organic Chemistry (3) (lab required same semester*) | | CHEM 322A *and* CHEM 323A |
| | CHEM 323B | Organic Chemistry Laboratory (1)* | | CHEM 322A *and* CHEM 323A |
| | CHEM 441A | Biological Chemistry (3) | | CHEM 320B or both CHEM 322B and 323B |
| | CHEM 441B | Fundamentals of Biological Chemistry (3) | | CHEM 441A |

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

**Take ALL of the following courses:**

| | | | | |
|---|---|---|---|---|
| | BIOL 340 | Molecular Cell Biology (3) | | BIOL 211, 212; CHEM 320A or 322A or 327 |
| | BIOL 370 | General Genetics (4) | | BIOL 211, 212, *and* either BIOL 260 or CHEM 251 |
| | BIOL 480 | Seminars (1) | | Taken the semester the student plans to graduate with the consent of dept |

**Take one of the following:**

| | | | | |
|---|---|---|---|---|
| | BIOL 312 | Evolutionary Biology (3) | | BIOL 211, 212, 213, 260 |
| | BIOL 350 | General Ecology (3)* | | BIOL 211, 212, 213, 260; MATH 119A or 122 |

**Take at least one of the following course/course pairs:**

| | | | | |
|---|---|---|---|---|
| | BIOL 342<br>BIOL 342L | Human/Mammalian Phys (3)<br>Lab in Human/Mammalian Phys (1) | | BIOL 211, 212, 213<br>BIO 342; pre/corequisite |

**OR**

| | | | | |
|---|---|---|---|---|
| | BIOL 345<br>BIOL 345L | Comparative Animal Phys (3)<br>Lab in Comp Animal Phys (1) | | BIOL 211, 212, 213<br>BIO 345; pre/corequisite |

**OR**

| | | | | |
|---|---|---|---|---|
| | BIOL 440L | Molecular Cell Biology Laboratory (3) | | BIOL 340, 370 |

**Take FOUR of the following upper division elective courses:**

| | | | | |
|---|---|---|---|---|
| | BIOL 431 | Biology of Cancer (3) | | BIOL 340, 370 |
| | BIOL 432 | Stem Cell Biology (3) | | BIOL 433 |
| | BIOL 433 | Developmental Biology (3) | | BIOL 340; BIOL 370 or MICR 371 |
| | BIOL 440L | Molecular Cell Biology Lab (3) | | BIOL 340, 370 and consent of instructor |
| | BIOL 442 | Physiology at the Limit (3) | | BIOL 342 or 345 |
| | BIOL 443 | Endocrinology (3) | | BIOL 340 or CHEM 441B; CHEM 320A or 322A or 327; and one of the following: BIOL 341, 342, 345, 448; CHEM 441A or 448 |
| | BIOL 444 | Reproductive Biology (3) | | BIOL 342 or 345 |
| | BIOL 445 | Metabolic Regulation (3) | | BIOL 340 or 342 or 345; CHEM 441A |
| | BIOL 447 | Molecular Plant Physiology (3) | | BIOL 340, 370 |
| | BIOL 448 | Principles of Neurobiology (3) | | BIOL 340 or CHEM 441B and one of the following: BIOL 341, 342, or 345 |
| | BIOL 449 | Fish Physio and Endocrinology (3) | | BIOL 345 |
| | BIOL 472 | Molecular Evolution | | BIOL 370 |
| | BIOL 473 | Molecular Genetics | | BIOL 370 or MICR 371; CHEM 320A, B or 322A,B *and* 323A,B or 327 |
| | BIOL 477 | Biotechnology & Bioinformatics (4) | | BIOL 340 or 370 or CHEM 41A,B |
| | BIOL/MICR 416 | Virology (3) | | MICR 320 or BIOL 340 |
| | BIOL/MICR 430 | Immunology (3) | | BIOL 340 |

With permission of the appropriate advisor, students may substitute one course in the biological sciences that is not on the above list for one of these four courses. Courses that do not meet any specific ore elective requirements for this major: BIOL 301, 304, 305, 308, 309I; MICR 300I; and NSCI 492. Student contemplating graduate or professional school should consider taking 1-3 units of BIOL 496 in addition to the requirements listed above. With prior permission of the advisor for this option, students may use 3 units of BIOL 496 as an elective.

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 06/10/13