UNDERGRADUATE STUDIES:
BIOLOGY – EMPHASIS IN MARINE BIOLOGY CHECKLIST

Preparation for the Major Coursework
See Department of Biology undergraduate advisers (LS-135) or Dr. Matt Edwards (LS-203)

This emphasis provides education and training for students planning to enter marine professions with a B.S. or advanced degree. Students will be qualified for field and laboratory technician positions, research, and resource development and management. Marine biologists are employed by the private sector (e.g., environmental studies, seafood industries) and public agencies (e.g., NMFS, USFWS, state fish and game, water quality, local planning and management). Marine biologists with graduate degrees normally have a wider range of employment opportunities, including advanced research positions and college and university faculty positions.

Four Year Degree
To finish your degree in four years, all 9 sets of premajor courses listed below will need to be finished by the end of your 4th semester, or the 5th at the latest

Impaction
Biology is impacted. After admission to SDSU, students are initially placed into the Biology premajor. Premajors must meet department specific criteria in order to be admitted into the major. Admission to Biology Major requires the following:

- Completion of all the preparation for the Major courses and a combined GPA of 2.8 or higher in these courses (excluding Phys 180A, 180B, 182A, and 182B).
- A minimum of C or better in every course (Recommended A’s and B’s).
- Courses in the Preparation for the Major cannot be taken Cr/Nc.

After completing these requirements, you will be admitted to the Major automatically. If you are not admitted automatically meet with the Undergraduate Biology Advisor as soon as possible.

Students who do not meet one or more requirements should meet with the Undergraduate Biology Advisor each semester to determine an appropriate course of action

NOTE: Not all upper division Biology courses are offered every semester. Check the current class schedule for complete course listings.

<table>
<thead>
<tr>
<th>PREPARATION FOR THE MAJOR (37 units of lower division courses)</th>
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<tbody>
<tr>
<td><strong>Biol 203</strong>  Princ. of Cell Molec. Biology</td>
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<tr>
<td><strong>Biol 203L</strong>  Princ. of Cell Molec. Biology Lab</td>
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<tr>
<td><strong>Biol 204</strong>  Princ. of Organismal Biology</td>
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<tr>
<td><strong>Biol 204L</strong>  Princ. of Organismal Biology Lab</td>
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<tr>
<td><strong>Biol 215</strong>  Biostatistics</td>
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<tr>
<td><strong>Chem 200</strong>  General Chemistry</td>
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<td><strong>Chem 201</strong>  General Chemistry</td>
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</tbody>
</table>

No transfer courses will substitute for courses in the major without prior departmental approval.
UPPER DIVISION MAJOR
(36 units)
2.0 GPA required in all upper division coursework applied to the major.

CORE COURSEWORK (15 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>Biol 352 Genetics and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>Biol 354 Eco. and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>Chem 365 Biochem CMB I</td>
<td>3</td>
</tr>
<tr>
<td>Biol 366 Biochem, CMB II</td>
<td>4</td>
</tr>
<tr>
<td>Boil 366L Biochem, CMB Lab</td>
<td>2</td>
</tr>
</tbody>
</table>

ELECTIVE COURSEWORK (21 Units Minimum)

Required: At least three courses must be taken from this list.

- **Biol 512 Evolution and Ecology of Marine Mammals (3)**
- **Biol 514 Biology of Algae (4)**
- **Biol 515 Marine Invertebrate Biology (4)**
- **Biol 516B Marine Larval Ecology Research Pt.2 (4)**
- **Biol 517 Marine Ecology (4)**
- **Biol 518 Biology of Fishes (4)**
- **Biol 542 Ecological Signaling in the Environment (3)**
- **Bio 496 Experimental Topics (1-3)**
- **Bio 596 Special Topics in Biology (1-3)**

Max 3 units

Required: 2 Lab Courses (One class cannot fulfill both lab course requirements.)

1. Organismal Lab Requirement – select at least one Organismal lab in bold from below.

- **Biol 350 General Microbiology (4)**
- **Biol 354L Genetics and Evolution (2)**
- **Biol 436 Ecology and the Environment (2)**
- **Biol 458 Plant Biology (4)**
- **Biol 480L Clinical Hematology Laboratory (1)**
- **Biol 512 Evolutionary & Ecology of Marine Mammals (3)**
- **Biol 514 Biology of Algae (4)**
- **Biol 515 Marine Invertebrate Biology (4)**
- **Biol 516B Marine Larval Ecology Research Pt.2 (4)**
- **Biol 520 Animal Behavior Lab (1)**
- **Biol 526 Terrestrial Arthropod Biology (4)**
- **Biol 527L Microbial Ecology (3)**
- **Biol 530 Plant Systematics (4)**
- **Biol 531 Taxonomy of California Plants (4)**
- **Biol 535 Plant Ecology (4)**
- **Biol 540 Conservation Ecology (3)**
- **Biol 544L Global Change Science Lab (2)**
- **Biol 556 Scanning Electron Microscopy Lab (2)**
- **Biol 557 Transmission Electron Microscopy Lab (3)**
- **Biol 562 Ecological Metagenomics (3)**
- **Biol 567L Biochemistry, Cellular and Molecular Biology Lab II (2)**
- **Biol 568 Bioinformatics (3)**
- **Biol 597A Univariate Statistical Methods in Biology (3)**
- **Biol 597B Multipurpose Lab (3)**
- **Biol 597C Marine Biology Lab (3)**
- **Biol 597D General Ecology Lab (3)**
- **Biol 597F Marine Biology Lab (3)**
- **Biol 598 Population Genetics Lab (3)**
- **Biol 599 Field Ecology Lab (3)**
- **Biol 599T Terrestrial Arthropod Biology Lab (3)**
- **Biol 599Y Marine Biology Lab (3)**

2. Lab Elective Requirement – select at least one additional lab course from below (may or may not be organismal)

- **Biol 350 General Microbiology (4)**
- **Biol 354L Genetics and Evolution (2)**
- **Biol 436 Ecology and the Environment (2)**
- **Biol 458 Plant Biology (4)**
- **Biol 480L Clinical Hematology Laboratory (1)**
- **Biol 512 Evolutionary & Ecology of Marine Mammals (3)**
- **Biol 514 Biology of Algae (4)**
- **Biol 515 Marine Invertebrate Biology (4)**
- **Biol 516B Marine Larval Ecology Research Pt.2 (4)**
- **Biol 520 Animal Behavior Lab (1)**
- **Biol 526 Terrestrial Arthropod Biology (4)**
- **Biol 527L Microbial Ecology (3)**
- **Biol 530 Plant Systematics (4)**
- **Biol 531 Taxonomy of California Plants (4)**
- **Biol 535 Plant Ecology (4)**
- **Biol 540 Conservation Ecology (3)**
- **Biol 544L Global Change Science Lab (2)**
- **Biol 556 Scanning Electron Microscopy Lab (2)**
- **Biol 557 Transmission Electron Microscopy Lab (3)**
- **Biol 562 Ecological Metagenomics (3)**
- **Biol 567L Biochemistry, Cellular and Molecular Biology Lab II (2)**
- **Biol 568 Bioinformatics (3)**
- **Biol 597A Univariate Statistical Methods in Biology (3)**
- **Biol 597B Multipurpose Lab (3)**
- **Biol 597C Marine Biology Lab (3)**
- **Biol 597D General Ecology Lab (3)**
- **Biol 597F Marine Biology Lab (3)**
- **Biol 597G Population Genetics Lab (3)**
- **Biol 597H Field Ecology Lab (3)**
- **Biol 597I Terrestrial Arthropod Biology Lab (3)**
- **Biol 597J Marine Biology Lab (3)**
- **Biol 597K Evolutionary & Ecology of Marine Mammals (3)**
- **Biol 597M Marine Larval Ecology Research Pt.2 (4)**
- **Biol 597N Marine Larval Ecology Research Pt.3 (4)**
- **Biol 598 Marine Biology Lab (3)**
- **Biol 599 Field Ecology Lab (3)**
- **Biol 599T Terrestrial Arthropod Biology Lab (3)**
- **Biol 599Y Marine Biology Lab (3)**
- **Biol 599Z Marine Biology Lab (3)**
- **Biol 599AA Marine Biology Lab (3)**
- **Biol 599BB Marine Biology Lab (3)**
- **Biol 599CC Marine Biology Lab (3)**
- **Biol 599DD Marine Biology Lab (3)**
- **Biol 599EE Marine Biology Lab (3)**
- **Biol 599FF Marine Biology Lab (3)**
- **Biol 599GG Marine Biology Lab (3)**
- **Biol 599HH Marine Biology Lab (3)**
- **Biol 599II Marine Biology Lab (3)**
- **Biol 599JJ Marine Biology Lab (3)**
- **Biol 599KK Marine Biology Lab (3)**
- **Biol 599LL Marine Biology Lab (3)**
- **Biol 599MM Marine Biology Lab (3)**
- **Biol 599NN Marine Biology Lab (3)**
- **Biol 599OO Marine Biology Lab (3)**
- **Biol 599PP Marine Biology Lab (3)**
- **Biol 599QQ Marine Biology Lab (3)**
- **Biol 599RR Marine Biology Lab (3)**
- **Biol 599SS Marine Biology Lab (3)**
- **Biol 599TT Marine Biology Lab (3)**
- **Biol 599UU Marine Biology Lab (3)**
- **Biol 599VV Marine Biology Lab (3)**
- **Biol 599WW Marine Biology Lab (3)**
- **Biol 599XX Marine Biology Lab (3)**
- **Biol 599YY Marine Biology Lab (3)**
- **Biol 599ZZ Marine Biology Lab (3)**

Custom Electives
- Customize your major by taking courses that you’re interested in that are upper division Biology courses numbered 350-599 (except Biol 452) and upper division Chemistry courses (except Chem 300, 308, 497, 499, 560).
- Prior approval of the Biology Undergraduate Advisor (LSN-135) is needed and paperwork must be filed in order to enroll in Biol 497 and/or 499.
- A maximum of 6 units between Biol 497 and 499 may be applied to the major.
- Elective courses other than Marine Biology electives listed above (including Biol 496 and 596) must be approved by the emphasis Advisor.

No transfer courses will substitute for courses in the major without prior departmental approval.

Rev. 7/10/18