UNDERGRADUATE STUDIES:
BIOLOGY – EMPHASIS IN EVOLUTIONARY BIOLOGY
CHECKLIST

Visit the Biology Undergraduate Advising Center in LSN 102
Phone: (619) 594-6442 Email: bioundergrad@sdsu.edu
Program Advisor: Dr. Marshal Hedin (LSN-102)

Preparation for the Major Coursework

This field focuses on the evolutionary relationships among species and the processes that drive evolutionary change. Systematics is the detailed study of a group of organisms to determine their evolutionary relationships (phylogeny), clarify its classification, and assess trends in ecology, biogeography, and evolutionary processes. Evolutionary biologists explore mating systems, drift, gene flow and natural selection with studies that include anatomy, behavior, biogeography, development, ecology, genetics, and molecular biology of both living and fossil organisms. Graduates can work in universities, museums, zoos, biotechnology or governmental agencies.

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.

PREPARATION FOR THE MAJOR (37 units of lower division courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 203</td>
<td>Princ. of Cell Molec. Biology</td>
<td>3</td>
</tr>
<tr>
<td>Biol 203L</td>
<td>Princ. of Cell Molec. Biology Lab</td>
<td>1</td>
</tr>
<tr>
<td>Biol 204</td>
<td>Princ. of Organismal Biology</td>
<td>3</td>
</tr>
<tr>
<td>Biol 204L</td>
<td>Princ. of Organismal Biology Lab</td>
<td>1</td>
</tr>
<tr>
<td>Biol 215</td>
<td>Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>Chem 200</td>
<td>General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>Chem 201</td>
<td>General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>Chem 232</td>
<td>Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>Chem 232L</td>
<td>Organic Chemistry Lab</td>
<td>1</td>
</tr>
<tr>
<td>Math 124</td>
<td>Calculus of Life Sciences</td>
<td>4</td>
</tr>
<tr>
<td>Phys 180A</td>
<td>Fundamentals of Physics</td>
<td>3</td>
</tr>
<tr>
<td>Phys 180B</td>
<td>Fundamentals of Physics</td>
<td>3</td>
</tr>
<tr>
<td>Phys 182A</td>
<td>Physical Measurements</td>
<td>1</td>
</tr>
<tr>
<td>Phys 182B</td>
<td>Physical Measurements</td>
<td>1</td>
</tr>
</tbody>
</table>

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

*: Only offered during Fall. See Biology Undergraduate Advisor to plan your coursework accordingly.
UPPER DIVISION MAJOR  
*(36 units)*
Cumulative 2.0 GPA required in all upper division coursework applied to the major.

**Required Core Coursework** (20 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Biol 351 Genetics</td>
<td>3</td>
</tr>
<tr>
<td>Biol 352 Evolution</td>
<td>3</td>
</tr>
<tr>
<td>Biol 354 Eco. and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>Chem 365 Fundamentals of Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>Biol 366 Cell and molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>Boil 366L Biochem, CMB Lab</td>
<td>2</td>
</tr>
<tr>
<td>Biol 509 Advanced Evolution†</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective Coursework** (16 Units Minimum)

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

- Biol 458 Plant Biology (3)
- Biol 510 Molecular Evolution (3)
- Biol 512 Evolution and Ecology of Marine Mammals (3)
- Biol 515 Marine Invertebrate Biology (4)
- Biol 518 Biology of Fishes (4)
- Biol 523 Herpetology (3)
- Biol 524 Ornithology (4)
- Biol 525 Mammalogy (3)
- Biol 526 Terrestrial Arthropod Biology (4)
- Biol 527 Animal Behavior (3)
- Biol 528 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 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
- Biol 658 Bioinformatics (3)

**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.

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 Experimental Ecology (2)
- Biol 436 Human Physiology Lab (2)
- Biol 512 Evolution & Ecology of Marine Mammals (3)
- Biol 514 Biology of the 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 523 Herpetology (3)
- Biol 524 Ornithology (4)
- Biol 525 Mammalogy (3)
- Biol 526 Terrestrial Arthropod Biology (4)
- Biol 527 Animal Behavior (3)
- Biol 528 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 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
- Biol 568 Bioinformatics (3)
- Biol 569 Animal Behavior Lab (1)
- Biol 576 Developmental Biology (3)
- Biol 496 Experimental Topics (1-3)
- Biol 596 Animal Behavior Lab (1)
- Biol 568 Bioinformatics (3)
- Biol 569 Animal Behavior Lab (1)
- Biol 576 Developmental Biology (3)
- Biol 496 Experimental Topics (1-3)
- Biol 596 Animal Behavior Lab (1)
- Biol 568 Bioinformatics (3)

**Custom Electives**

- Customize your major by taking courses that you’re interested in that are upper division Biology courses numbered 350-599 and upper division Chemistry courses (except Chem 300, 308, 497, 499, 560).
- Prior approval of the Biology Undergraduate Advisor (LSN-102) is needed and paperwork must be filed in order to enroll in Biol 497, 499, and/or 490.
- A maximum or 6 units between Biol 497 and 499 may be applied to the major.
- Elective courses other than Evolutionary 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.

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Rev. 8/03/18