

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.

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

Biol 203	Princ. of Cell Molec. Biology	3		Chem 232	Organic Chemistry	3	
Biol 203L	Princ. of Cell Molec. Biology Lab	1		Chem 232L	Organic Chemistry Lab	1	
Biol 204	Princ. of Organismal Biology	3		Math 124	Calculus of Life Sciences	4	
Biol 204L	Princ. of Organismal Biology Lab	1		Phys 180A	Fundamentals of Physics	3	
Biol 215	Biostatistics	3		Phys 182A	Physical Measurements	1	
Chem 200	General Chemistry	5		Phys 180B	Fundamentals of Physics	3	
Chem 201	General Chemistry	5		Phys 182B	Physical Measurements	1	

UPPER DIVISION MAJOR

(36 units)

2.0 GPA required in all upper division coursework applied to the major.

CORE COURSEWORK (15 units)

Biol 352 Genetics and Evolution	3	Biol 366 Biochem, CMB II	4	
Biol 354 Eco. and the Environment	3	Boil 366L Biochem, CMB Lab	2	
Chem 365 Biochem CMB I	3			

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) ^L	Biol 517	Marine Ecology (4) ^L
Biol 514	Biology of Algae (4) ^L	Biol 518	Biology of Fishes (4) ^L
Biol 515	Marine Invertebrate Biology (4) ^L	Biol 542	Ecological Signaling in the Environment (3)
Biol 516A	Marine Larval Ecology Research Pt.1 (4) ^L	Bio 496	Experimental Topics (1-3)
Biol 516B	Marine Larval Ecology Research Pt.2 (4) ^L	and/or 596	Special Topics in Biology (1-3)
(Max 3 units)			

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

1. <u>Organismal Lab Requirement</u> – select at least one Organismal lab in bold from below.		
2. <u>Lab Elective Requirement</u> – select at least one additional lab course from below (may or may not be organismal)		

Biol 350	General Microbiology (4)	Biol 526	Terrestrial Arthropod Biology (4)
Biol 354L	Genetics and Evolution (2)	Biol 527L	Animal Behavior Lab (1)
Biol 436	Ecology and the Environment (2)	Biol 528	Microbial Ecology (3)
Biol 458	Plant Biology (4)	Biol 530	Plant Systematics (4)
Biol 480L	Clinical Hematology Laboratory (1)	Biol 531	Taxonomy of California Plants (4)
Biol 512	Evolutionary & Ecology of Marine Mammals (3)	Biol 535	Plant Ecology (4)
Biol 514	Biology of Algae (4)	Biol 540	Conservation Ecology (3)
Biol 515	Marine Invertebrate Biology (4)	Biol 544L	Global Change Science Lab (2)
Biol 516A	Marine Larval Ecology Research Pt.1 (4)	Biol 556	Scanning Electron Microscopy Lab (2)
Biol 516B	Marine Larval Ecology Research Pt.2 (4)	Biol 557	Transmission Electron Microscopy Lab (3)
Biol 517	Marine Ecology (4)	Biol 562	Ecological Metagenomics (3)
Biol 518	Biology of Fishes (4)	Biol 567L	Biochemistry, Cellular and Molecular Biology Lab II (2)
Biol 523	Herpetology (4)	Biol 568	Bioinformatics (3)
Biol 524	Ornithology (4)	Biol 597A	Univariate Statistical Methods in Biology (3)
Biol 525	Mammalogy (4)		

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.
