UNDERGRADUATE STUDIES:
BIOLOGY – EMPHASIS IN EVOLUTIONARY BIOLOGY CHECKLIST

Preparation for the Major Coursework

See Department of Biology undergraduate advisers (LS-135) or Marshal Hedin (LS-204)

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)

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	

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

[1] Only offered during Fall. See Biology Undergraduate Advisor to plan your coursework accordingly.

UPPER DIVISION MAJOR

(36 units)

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

Core Coursework (18 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		Biol 509 Evolutionary Biology[1]	3	

Elective Coursework (18 Units Minimum)

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

Biol 458	**Plant Biology (4)^{L}**	Biol 527L	Animal Behavior Lab (1)^{L}
Biol 510	Molecular Evolution (3)	**Biol 528**	**Microbial Ecology (3)^{L}**
Biol 512	**Evolution and Ecology of Marine Mammals (3)^{L}**	**Biol 530**	**Plant Systematics (4)^{L}**
		Biol 531	**Taxonomy of California Plants (4)**
Biol 515	**Marine Invertebrate Biology (4)^{L}**	Biol 568	Bioinformatics (3)
Biol 518	Biology of Fishes (4)^{L}	Biol 576	Developmental Biology (3)
Biol 523	**Herpetology (4)^{L}**	Biol 496	Experimental Topics (1-3)
Biol 524	**Ornithology (4)^{L}**	and/or	
Biol 525	**Mammology (4)^{L}**	596	Special Topics in Biology (1-3)
Biol 526	**Terrestrial Arthropod Biology (4)^{L}**	(Max 3	
Biol 527	Animal Behavior (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.		
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 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 540	Conservation Ecology (3)
Biol 514	Biology of the Algae (4)	Biol 544L	Global Change Science Lab (2)
Biol 515	**Marine Invertebrate Biology (4)**	Biol 556	Scanning Electron Microscopy Lab (2)
Biol 516A	Marine Larval Ecology Research Pt.1 (4)	Biol 557	Transmission Electron Microscopy Lab (3)
Biol 516B	Marine Larval Ecology Research Pt.2 (4)	Biol 562	Ecological Metagenomics (3)
Biol 517	Marine Ecology (4)	Biol 567L	Biochemistry, Cellular and Molecular Biology Lab II (2)
Biol 518	Biology of Fishes (4)		
Biol 523	**Herpetology (4)**	Biol 568	Bioinformatics (3)
Biol 524	**Ornithology (4)**	Biol 597A	Univariate Statistical Methods in Biology (3)
Biol 525	**Mammology (4)**		

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-135) is needed and paperwork must be filed in order to enroll in Biol 497 and/or 499
- 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.

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