

UNDERGRADUATE STUDIES: MICROBIOLOGY CHECKLIST

Preparation for the Major Coursework

See Department of Biology undergraduate advisers (LS-135) or Dr. Anca Segall

Microbiology is the study of microorganisms (bacteria, viruses, fungi), their activities, and their impact on man, animals, and the environment. The discipline and related careers include: medical & clinical microbiology, virology, immunology, industrial microbiology & biotechnology, food & pharmaceutical microbiology, including quality control, soil & aquatic microbiology, biodegradation, microbial physiology & biochemistry, microbial genetics and molecular biology.

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 for B.S., 30 units for B.A.)

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

Core Coursework (19 units)

Biol 350 General Microbiology	4	Chem 365 Biochem CMB I	3	
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	

Elective Coursework

(17 for B.S./ 11 for B.A. Units Minimum)

Required: B.S. *Four* courses must be taken from this list./ **B.A.** *Two* courses must be taken from this list.

Biol 480 Clinical Hematology (3)	Biol 562 Ecological Metagenomics (3)
Biol 485 Principles of Immunology (3)	Biol 567 Advanced Biochem, C.M.B III (4)
Or	Biol 567L Advanced Biochem, C.M.B III Lab (2) ^L
Biol 585 Cellular and Molecular Immunology (3)	Biol 568 Bioinformatics (3) ^L
Biol 528 Microbial Ecology (3)^L	Biol 584 Medical Microbiology (3)
Biol 549 Microbial Genetic and Physiology (3)	Biol 590 Physiology of Human Systems (4)
Biol 554 Molecular Virology (3)	Chem 432 Organic Chemistry (3)
Biol 556 Scanning Electron Microscopy Lab (2) ^L	Chem 432L Organic Chemistry Lab (1)
Biol 557 Transmission Electron Micr. Lab (3) ^L	

Required: Lab Electives

<u>Lab Elective Requirement For B.S.</u> – select at least <i>one</i> additional lab courses from below (may or may not be organismal)		
<u>Lab Elective Requirement For B.A.</u> – select at least <i>one</i> lab course from below (may or may not be organismal)		

Biol 350 General Microbiology (4) Biol 354L Ecology and the Environment Lab (2) Biol 436 Human Physiology Lab (2) Biol 458 Plant Biology (4) Biol 480L Clinical Hematology Lab. (1) Biol 512 Evolutionary & Ecology of Marine Mammals (3) Biol 514 Biology of Algae (4) Biol 515 Marine Invertebrate Biology (4) Biol 516A Marine Larval Ecology Research Pt.1 (4) Biol 516B Marine Larval Ecology Research Pt.2 (4) Biol 517 Marine Ecology (4) Biol 518 Biology of Fishes (4) Biol 523 Herpetology (4) Biol 524 Ornithology (4) Biol 525 Mammalogy (4)	Biol 526 Terrestrial Arthropod Biology (4) Biol 527L Animal Behavior Lab (1) 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 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)
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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 Microbiology electives listed above (including Chem 498, Biol 496 and 596) must be approved by the emphasis Advisor.
