

UNDERGRADUATE STUDIES: MICROBIOLOGY - EMPHASIS IN CLINICAL LABORATORY SCIENCE CHECKLIST

Visit the [Biology Undergraduate Advising Center](#) in LSN 102

Phone: (619) 594-6442 Email: biundergrad@sdsu.edu

Preparation for the Major Coursework

The emphasis in clinical laboratory science and public health microbiology is a State of California approved program of study that prepares students for Public Health Microbiologist and Clinical Laboratory Scientist academic certification and licensing examinations (see <http://www.sci.sdsu.edu/bioadvise/cls.html>). Laboratory experience is highly recommended. Students interested in CLS should check with the emphasis adviser before beginning coursework, to discuss required internships and other considerations.

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 Chem 251, 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 (Except for Chem 251)

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 (42 units of lower division courses)

Biol 203	Princ. of Cell Molec. Biology	3	
Biol 203L	Princ. of Cell Molec. Biology Lab	1	
Biol 204	Princ. of Organismal Biology	3	
Biol 204L	Princ. of Organismal Biology Lab	1	
Biol 215	Biostatistics	3	
Chem 200	General Chemistry	5	
Chem 201	General Chemistry	5	
Chem 232	Organic Chemistry	3	

Chem 232L	Organic Chemistry Lab	1	
Chem 251	Analytical Chemistry	5	
Math 124	Calculus of Life Sciences	4	
Phys 180A	Fundamentals of Physics	3	
Phys 182A	Physical Measurements	1	
Phys 180B	Fundamentals of Physics	3	
Phys 182B	Physical Measurements	1	
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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.

² Only offered during Spring. See Biology Undergraduate Advisor to plan your coursework accordingly.

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UPPER DIVISION MAJOR

(36 units)

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

Required Core Coursework (30 units)

Biol 350 General Microbiology	4		Biol 366 Cell and Molecular Biology	3	
Biol 351 Genetics	3		Boil 366L Biochem, CMB Lab	2	
Biol 352 Evolution	3		Biol 480 Clinical Hematology ²	3	
Biol 354 Ecology and the Environment	3		Biol 485 Principles of Immunology ²	3	
Chem 365 Fundamentals of Biochemistry	3		Biol 584 Medical Microbiology ²	3	

Elective Coursework (6 Units Minimum)

Required: At least two courses must be selected from the list below.

Biol 528 Microbial Ecology (3)	Biol 567L Biochem, C.M.B Lab II (2)
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)	Or Chem
Biol 557 Transmission Electron Microscopy Lab (3)	432L Organic Chemistry Lab (1)

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-102) is needed and paperwork must be filed in order to enroll in Biol 497, 497, and/or 490.
- 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.

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