

# CHECK LIST FOR THE MICROBIOLOGY MAJOR

Adviser: Dr. Anca Segall (LS-416)

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

## PREPARATION FOR THE MAJOR (39 units of lower division courses)

Biol 203	Principles of Cell & Molecular Biol.	3	_____	Chem 232	Organic Chemistry	3	_____
Biol 203L	Princ. of Cell & Molecular Biol. Lab	1	_____	Chem 232L	Organic Chemistry Lab	1	_____
Biol 204	Principles of Organismal Biology	3	_____	Math 121	Calculus for the Life Sciences I	3	_____
Biol 204L	Principles of Organismal Biology Lab	1	_____	Math 122	Calculus for the Life Sciences II	3	_____
Biol 215	Biostatistics	3	_____	Phys 180A	Fundamentals of Physics	3	_____
Chem 200	General Chemistry	5	_____	Phys 182A	Physical Measurements	1	_____
Chem 201	General Chemistry	5	_____	Phys 180B	Fundamentals of Physics	3	_____
				Phys 182B	Physical Measurements	1	_____

Microbiology is an **impacted major**. Students who wish to declare a Microbiology major are initially placed into the Microbiology **premajor**. Premajors must meet department-specific criteria in order to be admitted to the major. (Note that admission to SDSU is a separate process from admission to the major, and is reviewed by a separate administrative unit.)

For this catalog year, admission to the Microbiology major requires:

- completion of the Preparation for the Major courses
- an overall GPA of at least 2.6
- a GPA of 2.7 or higher in Preparation courses
- satisfaction of the lower-division writing competency requirement
- a minimum grade of C in each Preparation course
- no coursework for the premajor or the major may be graded Cr/NC

Students who have completed these requirements must meet with the Biology undergraduate advisors to be admitted to the major.

Students who do not meet one or more minimum grade or minimum GPA requirements should meet with the Biology undergraduate advisors to determine the appropriate course of action.

## MAJOR (Minimum of 36 upper division units for the B.S. ; 31 upper division units for the B.A.)

### Required courses (30-31 units):

Biol 350	General Microbiology	4	_____	Biol 567	Adv. Bioch., Cell & Mol. Biol.	4	_____
Biol 352	General Genetics and Evolution	3	_____	<i>Notes for the following three courses:</i>			
Biol 354	Ecology and the Environment	3	_____	<i>B.A. must take 567L and EITHER 528 or 584</i>			
Chem 365	Biochem., Cell & Mol. Biol. I	3	_____	<i>B.S. must take 584 and EITHER 528 or 567L</i>			
Biol 366	Biochem., Cell & Mol. Biol. II	4	_____	Biol 528	Microbial Ecology	3	_____
Biol 366L	Biochem., Cell & Mol. Biol. Lab. I	2	_____	Biol 584	Medical Microbiology	3	_____
Biol 549	Microbial Genetics and Physiology	3	_____	Biol 567L	Adv. Bioch., Cell & Mol. Biol. Lab <sup>3</sup>	2	_____

### Elective courses for B.S. (5-6 units) must be selected from the following courses:

Biol 485	Principles of Immunology <sup>2</sup>	3	_____	Biol 584	Medical Microbiology	3	_____
OR Biol 585	Cellular and Mol. Immunology <sup>2</sup>	3	_____	†Biol 588	General Parasitology	3	_____
Biol 496	Clinical Hematology	3	_____	Biol 590	Physiology of Human Systems	4	_____
Biol 528	Microbial Ecology	3	_____	Biol 596	Ecological Metagenomics	1	_____
Biol 554	Molecular Virology	3	_____	Biol 497/499	Spec Study/Research (max 3 units) <sup>1</sup>	1-3	_____
†Biol 555	Principles of Electron Microscopy	2	_____	Biol 490	Undergraduate Honors Research <sup>1</sup>	3	_____
Biol 556	Scanning Electron Microscopy Lab.	2	_____	Chem 432	Organic Chemistry	3	_____
Biol 557	Transmission Electron Micro. Lab.	3	_____	Chem 432L	Organic Chemistry Lab	1	_____
Biol 567L	Biochem., Cell & Mol Biol Lab II	2	_____				
Biol 568	Bioinformatics	3	_____				

† Not taught in AY 11-12.

<sup>1</sup> Prior approval of the Biology adviser (in LS-135) is needed and papers must be filed with the Office of Advising & Evaluations.

<sup>2</sup> Biol 585 is not open to students with credit in Biology 485.

<sup>3</sup> Biol 567L must be taken concurrently with Biol 567, or after Biol 567.

## **Department of Biology**

<http://www.bio.sdsu.edu/>

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San Diego, CA 92182-4614

## **Undergraduate Advising Office**

<http://www.sci.sdsu.edu/bioadvise/>

Life Sciences North, Room 135  
Phone (619) 594-6442 Fax (619) 594-5676  
bioundergrad@sunstroke.sdsu.edu

Dr. Andrew J. Bohonak, Vice Chair of Biology, and  
Director of Undergraduate Advising and Curriculum

Mr. Eddie Lopez, M.S., Associate Director of Advising

Ms. Arlene Castillo, M.S., Administrative Coordinator

### **Degree opportunities**

The Department of Biology offers the following degrees:

B.S. in Biology, with optional emphases in Bioengineering, Cellular & Molecular Biol., Ecology, Evolution & Systematics, Marine Biology, or Zoology	B.A. in Biology
B.S. in Microbiology, with an optional emphasis in Clinical Laboratory Science or Public Health Microbiology	B.A. in Microbiology
Minor in Biology, with optional emphases in five areas	Biotechnology Certificate

Coursework to demonstrate subject matter competency for the  
Single Subject Teaching Credential in Biology/Life Sciences

### **For the most current information, see the bioadvising web page**

<http://www.sci.sdsu.edu/bioadvise/>

- Answers to 25 Frequently Asked Questions
- Calendar of important dates
- Checklists of courses required for each of our degrees
- Course offerings we are planning for the entire academic year
- Information on new 496 and 596 "Special Topics" courses
- Course syllabi

### **Additional information**

Explanation of graduation requirements: <http://arweb.sdsu.edu/es/advising/9gradreqs.html>

Preprofessional Health Advising Office (GMCS-323): <http://www.sci.sdsu.edu/preprof/>

Articulation of transferable courses from CA community colleges: [www.assist.org](http://www.assist.org)

Articulation of science courses not listed on [www.assist.org](http://www.assist.org): meet with Biology advisors

Career Services (register with them by your sophomore year): SSE 1200, <http://career.sdsu.edu/>

Chemistry 200 placement exam: [http://www.chemistry.sdsu.edu/courses/CHEM200/200\\_Placement\\_exam.php](http://www.chemistry.sdsu.edu/courses/CHEM200/200_Placement_exam.php)

Prospective students: <http://www.sdsu.edu/prospective.html>