

Curriculum Map

<http://www.hawaii.edu/microbiology/BS.html>

To see a sample 4 year schedule for a Microbiology degree and important registration information, go to the [College of Arts and Sciences Student Academic Services-Microbiology](#) web page

Note: You should take BIOL 171-171L (3+1), Introductory Biology (prerequisite to BIOL 172-172L), as a Natural Science course counting towards your core requirements.

MAJOR REQUIREMENTS: A minimum of 23 credit hours in Microbiology and of 6 credit hours in approved major electives (Total 29 credit hours).

REQUIRED RELATED COURSES (C grade minimum) (D for majors declared before July 2007)

BIOC 441 (4), Basic Biochem; MBBE 402 (4), Principles of Biochem, or CMB 405 (4) Biochemistry	4
BIOL 172-172L (3+1), Introduction to Biology II	4
BIOL 275-275L (3+1), Cell and Molecular Biology	4
CHEM 161-161L (3+1) & 162-162L (3+1), General Chem or	8 or
CHEM 181A-181L (4+1), Honors General Chemistry	5
CHEM 272-272L (3+2) & 273 (3), Organic Chemistry	8
MATH 215 (4) Applied Calculus I & MATH 216 (3) Applied Calculus II or MATH 241 (4) Calculus I, MATH 242 (3) Calculus II and MATH 242L (1) Calculus Computer Lab	7 or 8
PHYS 151-151L (3+1) & 152-152L (3+1), College Physics or PHYS 170-170L (4+1) & 272-272L (3+1), General Physics	8 or 9
Total	39- 45

REQUIRED MICROBIOLOGY COURSES (C grade minimum)

Basic introductory microbiology course; MICR 351-351L (3+2), Biology of Microorganisms	5
MICR 431 (3), 431L (2), Microbial Physiology	3
MICR 461 (3), 461L (2), Immunology	3
MICR 475 (3), 475L (2), Bacterial Genetics	3
<i>One of the following:</i>	3 or 5
MICR 463 (3), Microbiology of Pathogens	
MICR 485 (3), 485L/W (2), Microbes & Their Environment	
MICR 490/W-490L (3+2), Animal Virology (lab & lecture are co-requisites)	
<i>A total of 6 credits of the following laboratory courses:</i>	6 or 4
MICR 431L (2), Microbial Physiology, Lab	
MICR 461L (2), Immunology, Lab	
MICR 463L (2), Microbiology of Pathogens, Lab	
MICR 475L (2), Bacterial Genetics Lab	
MICR 485L/WI (2), Microbes & Their Environment, Lab	
MICR 490L (2), Animal Virology, Lab (Lab & Lecture are co-requisites)	
Total	23

APPROVED MAJOR ELECTIVES (C grade minimum)

A minimum of 6 credits from the following or approved equivalents. Some of these courses

have related laboratories which may be counted towards the 6 credits.

All 300- & 400-level Microbiology courses not used for the 23 credits of required courses

(This includes MICR 499, Microbiology Problems-directed readings & research; limit: 3 credits towards the degree)

BIOL 375-375L (3+1), Concepts of Genetics

BIOL 406 Cell Biology (see BIOL 408)

BIOL 407 (3), Molecular Cell Biology I (formerly Mol. Biol.)

BIOL 408 (3), Molecular Cell Biology II (formerly Cell Biol.)

BOT 430 (2+2), Mycology

BOT 480 (4), Algal Diversity and Evolution

CHEM 351 (3), Physical Chemistry I

CHEM 352 (3), Physical Chemistry II

ECON 321 (3), Introduction to Statistics

Food Sciences & Human Nutrition 430 (3), Food Chemistry

Food Sciences & Human Nutrition 403 (3), Microbiology of Foods

MBBE 401 (3), Molecular Biotechnology

MBBE 405 (3), Marine Functional Genomics and Biotechnology

PEPS 405 (4), Plant Pathogens and Diseases

PEPS 486 (3), Insect-Microbe Interactions

PH 663 (3), Principles of Epidemiology I

ZOOL 340 (2), Parasitology

ZOOL 416 (3), Histology

ZOOL 417 (3), Microtechnique

ZOOL 631 (4), Biometry

ZOOL 632 (4), Advanced Biometry

Notes

- Major electives should be chosen with the aid and approval of the department advisor to provide a well integrated and coherent program.
- Attention is drawn to the College of Arts and Sciences Basic requirements and to those in areas of language and culture, humanities and social sciences. It is the student's responsibility to meet these requirements.
- Prerequisites, micro requirements, required related courses and major electives cannot be taken CR/NC; they must be taken for a letter grade.
- Students can do a laboratory teaching internship and obtain a course credit for MICR 499. Students should have previously taken a laboratory class and obtain permission from the instructor.

Sample Schedule

- Freshman Year: Start Chemistry and Mathematics sequences as early as possible. Take BIOL 171 and 172 if possible.
- Sophomore Year: Take CHEM 272/272L, 273/273L, PHYS; MICR 351, 2nd semester as soon as CHEM 272 is completed.
- Junior Year: Take MICR 351, 1st semester, if not yet completed. Biochemistry and other major electives may also be taken. Biochemistry is desirable for students who wish to take MICR 461, 431, 490.
- Check early on the Arts and Science requirements to avoid conflicts and problems in the senior year, *e.g.*, language and/or required 'core' courses.