

MICROBIOLOGY

(for students entering Biology in Fall 2011 or later)

Graduation Requirements:

- A minimum 2.0 average in all biology courses required for this major
- A minimum of 32 credits at or above the 300-level completed at a Purdue campus
- At least one 500-level Biology course other than BIOL 54200
- 124 Total Credits

BIOLOGY:

1. BIOL 12100 Biology I: Diversity, Ecology and Behavior (2 cr.; fall)
2. BIOL 13100 Biology II: Development, Structure, and Function of Organisms (3 cr.; spring)
3. BIOL 13500 First Year Biology Lab (2 cr.; both) or BIOL 19500 CASPIE Laboratory (2cr.;both)
4. BIOL 23100 Biology III: Cell Structure and Function (3 cr.; fall)
5. BIOL 23200 Laboratory in Biology III: Cell Structure and Function (2 cr.; fall)
6. BIOL 24100 Biology IV: Genetics and Molecular Biology (3 cr.; spring)
7. BIOL 24200 Laboratory in Genetics and Molecular Biology (2 cr.; spring)
8. BIOL 28600 Intro. to Ecology & Evolution (2 cr.; spring) **or** BIOL 29500, Intro. to Evolution & Ecology (2 cr.; fall)

9. Intermediate Requirement: Choose one of these four options:

(Microbiology majors must choose BIOL 43800 and 43900, General Microbiology and Microbiology lab)

- A. BIOL 39500 Macromolecules (3 cr.; fall)
- B. BIOL 36600 Principles of Development (4 cr.; spring)
- C. BIOL 32800 Principles of Physiology (4 cr.; spring)
- D. **BIOL 43800 General Microbiology (3 cr.; fall) and BIOL 43900 Microbiology Lab (2 cr.; fall)**

10. BIOL 41600 Viruses and Viral Diseases (3 cr.; spring)
11. BIOL 44100 Senior Seminar in Genetics (1 cr.; spring)
12. BIOL 52900 Bacterial Physiology (3 cr.; spring)
13. BIOL 54100 Molecular Genetics of Bacteria (3 cr.; fall)
14. BCHM 56100 General Biochemistry (3 cr.; fall)
15. Biology Elective: Three credits of the following:
 - BIOL 44600 Cellular Microbiology (3 cr.; spring)
 - BIOL 47800 Intro to Bioinformatics (3 cr.; fall)
 - BIOL 44201 Introductory Module: Protein Expression plus two additional modules of BIOL 442xx (1-2 cr.; both) or 54200 (1 cr.; fall)
 - BIOL 53300 Medical Microbiology (3 cr.; fall)
 - BIOL 54900 Microbial Ecology (2 cr.; alternate spring)
 - BCHM 56200 General Biochemistry II (3 cr.; spring)

(requirements for the Microbiology major continue on the back of this page.)

MICROBIOLOGY HONORS CURRICULUM

A 3.0 or higher graduation index is required to graduate in the Microbiology Honors Curriculum

In addition to the requirements listed for the Microbiology program, the following three choices must be completed:

1. CHM 26505 Organic Chemistry (3 cr.; fall) and CHM 26300 Organic Chemistry Lab (1 cr.; fall) and CHM 26605 Organic Chemistry (3 cr.; spring) and CHM 26400 Organic Chemistry Lab (1 cr.; spring)
2. C S 15800 C Programming (3 cr.; both) **or** C S 17700 Programming with Multimedia Objects (4 cr.; both)
3. MA 26100 Multivariate Calculus (4 cr.; both)

and at least three of the following five choices must be completed:

1. PHYS 17200 Modern Mechanics (4 cr.; both) and PHYS 27200 Electric and Magnetic Interactions (4 cr.; both)
2. CHM 32100 Analytical Chemistry (4 cr.; fall)
3. One of these two options:
 - A. CHM 37200 Physical Chemistry (4 cr.; spring)
 - B. CHM 37300 Physical Chemistry (3 cr.; fall) and CHM 37400 Physical Chemistry (4 cr.; spring)
4. STAT 50300 Statistical Methods for Biology (3 cr.; both)
5. MA 26200 Linear Algebra and Differential Equations (4 cr.; both)

CHEMISTRY

1. CHM 11500 General Chemistry (4 cr.; both)
2. CHM 11600 General Chemistry (4 cr.; both)
3. One of these three options:
 - A. CHM 25500 Organic Chemistry (3 cr.; both) and CHM 25501 Organic Chemistry Lab (1 cr.; both) and CHM 25600 Organic Chemistry (3 cr.; both) and CHM 25601 Organic Chemistry Lab (1 cr.; both)
 - B. CHM 26505 Organic Chemistry (3 cr.; fall) and CHM 26300 Organic Chemistry Lab (1 cr.; fall) and CHM 26605 Organic Chemistry (3 cr.; spring) and CHM 26400 Organic Chemistry Lab (1 cr.; spring)
 - C. CHM 25700 Organic Chemistry (4 cr.; both) and CHM 25701 Organic Chemistry Lab (1 cr.; both) and one of:
CHM 33300 Principles of Biochemistry (3 cr.; both) or BCHM 30700 Biochemistry (3 cr.; both)

PHYSICS

One of these two options:

1. PHYS 22000 General Physics (4 cr.; both) and PHYS 22100 General Physics (4 cr.; both)
2. PHYS 17200 Modern Mechanics (4 cr.; both) and one of the following two choices:
 - A. PHYS 27200 Electric and Magnetic Interactions (4 cr.; both) or
 - B. PHYS 24100 Electricity and Optics (3 cr.; both) and PHYS 25200 Electricity and Optics Laboratory (1 cr.; spring)

COLLEGE OF SCIENCE CORE REQUIREMENTS

Composition and Presentation; Teambuilding and Collaboration; Language and Culture; Great Issues; General Education; Multidisciplinary Experience; Mathematics; Statistics; Computing (see handout).

FREE ELECTIVES

Approximately 1-24 credits