

HEALTH & DISEASE

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
- 120 Total Credits

BIOLOGY:

1. BIOL 12100 Biology I: Diversity, Ecology and Behavior (2 cr.; fall) **or**
BIOL 19500 Biodiversity, Ecology & Evolution (3 cr.; fall)
2. BIOL 13100 Biology II: Development, Structure, and Function of Organisms (3 cr.; spring) **or**
BIOL 19500 Organismal Development & Physiology (3 cr.; spring)
3. BIOL 13500 1st Year Biology Lab (2 cr.; both) **or**
BIOL 14501 1st Year Biology Lab w/Neuro Research Project (2 cr.; fall) **or**
IT 22600 Biotechnology Lab (2 cr.; fall)
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)
9. **Intermediate Biology Selective: Choose one of these eight options:
(Health & Disease majors must choose option H, BIOL 43800)**
 - A. BIOL 32800 Principles of Physiology (4 cr.; spring)
 - B. BIOL 36700 Principles of Development (2 cr.; spring)
plus BIOL 36701 Principles of Development
Laboratory (1 cr.; spring)
 - C. BIOL 39500 Macromolecules (3 cr.; fall)
 - D. BIOL 41500 Intro. to Molecular Biology (3 cr.; fall)
 - E. BIOL 41600 Viruses & Viral Diseases (3 cr.; spring)
 - F. BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall)
 - G. BIOL 43600 Neurobiology (3 cr.; fall)
 - H. **BIOL 43800 General Microbiology (3 cr.; fall)**
10. BIOL 30100 Human Anatomy & Physiology (3 cr.; fall)
11. BIOL 30200 Human Anatomy & Physiology (3 cr.; spring)
12. BIOL 43900 Lab in Microbiology (2 cr.; fall)
13. **Health & Disease Selective: One of these three courses¹:**
 - A. BIOL 41600 Viruses & Viral Diseases (3 cr.; spring) **or**
 - B. BIOL 53700 Immunology (3 cr.; spring) **or**
 - C. BIOL 55900 Endocrinology (3 cr.; fall)
14. **Biology Selectives: Six credits** from the following¹:

<ul style="list-style-type: none"> BIOL 32800 Principles of Physiology (4 cr.; spring) BIOL 36700 Principles of Development (2 cr.; spring) BIOL 36701 Lab in Principles of Development (1 cr.; spring) BIOL 39500 Macromolecules (3 cr.; fall) BIOL 41500 Intro. to Molecular Biology (3 cr.; fall) BIOL 41600 Viruses & Viral Diseases (3 cr.; spring) BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall) BIOL 43200 Reproductive Physiology (3 cr.; alternate fall) BIOL 43600 Neurobiology (3 cr.; fall) BIOL 442xx Modular Laboratory Courses (var titles) (1-2 cr.; both) BIOL 44400 Human Genetics (3 cr.; fall) BIOL 44600 Molecular Biology of Pathogens (3 cr.; spring) BIOL 47800 Intro to Bioinformatics (3 cr.; fall) BIOL 48100 Eukaryotic Genetics (3 cr.; spring) BIOL 48300 Environmental & Conservation Biology (3 cr.; spring) BIOL 49500 Biological & Structural Aspects of Drug Design & Action (3 cr.; spring) BIOL 51100 Intro. to X-Ray Crystallography (3 cr.; spring) BIOL 51600 Molecular Biology of Cancer (3 cr.; spring) BIOL 51700 Molecular Biology: Proteins (2 cr.; spring) BIOL 52900 Bacterial Physiology (3 cr.; spring) BIOL 53300 Medical Microbiology (3 cr.; fall) BIOL 53700 Immunology (3 cr.; spring) BIOL 53800 Molecular, Cellular & Developmental Neurobiology (3 cr.; spring) 	<ul style="list-style-type: none"> BIOL 54100 Molecular Genetics of Bacteria (3 cr.; fall) BIOL 54200 Neurophysiology Lab (1 cr.; fall) BIOL 54900 Microbial Ecology (2 cr.; alternate spring) BIOL 55001 Eukaryotic Molecular Biology (3 cr.; fall) BIOL 55900 Endocrinology (3 cr.; fall) BIOL 56200 Neural Systems (3 cr.; spring) BIOL 58000 Evolution (3 cr.; spring) BIOL 58500 Ecology (3 cr.; fall) BIOL 58705 Animal Communication (3 cr.; alternate fall) BIOL 59100 Field Ecology (4 cr.; alternate fall) BIOL 59200 Evolution of Behavior (3 cr.; alternate spring) BIOL 59500 Cellular Biology of Plants (3 cr.; alternate fall) BIOL 59500 Ecological Statistics (3 cr.; fall) BIOL 59500 Epigenetics in Human Disease (3 cr.; fall) BIOL 59500 Genetics & –Omics of Host-Microbe Interaction (3 cr.; fall) BIOL 59500 Methods & Measurement in Physical Biochemistry (3 cr.; fall) BIOL 59500 Neural Mechanisms in Health & Disease (3 cr.; fall) BIOL 59500 Neurobiology of Learning and Memory (3 cr.; fall) BIOL 59500 Protein Bioinformatics (2 cr.; spring) BIOL 59500 Sensory Ecology (3 cr.; alternate spring) BIOL 59500 Theory of Molecular Methods (3 cr.; fall) HORT 30100 Plant Physiology (4 cr.; fall)
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Research (49400 or 49900, maximum of 3 credits) will count toward the elective requirement.

¹ A 500-level BIOL course other than BIOL 54200 must be taken as part of either requirement #13 or #14.

Other requirements are on the back of this page.

CHEMISTRY

1. **General Chemistry:**

- A. CHM 12901² General Chemistry with a Biological Focus (5 cr.; fall)

2. **Organic Chemistry Selectives: One of these two 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)

3. **Chemistry Selective:**² (must choose one of the eight options)

- A. **Analytical Chemistry**
a. BCHM 22100 Analytical Biochemistry (3 cr.; both)
b. CHM 22400 Introductory Quantitative Analysis (4 cr.; spring)
c. CHM 32100 Analytical Chemistry I (4 cr.; fall)
B. **Biochemistry**
a. BCHM 56100 General Biochemistry I (3 cr.; both)
b. CHM 33900² (49000) Biochemistry: A Molecular Approach (3 cr.; spring)
c. CHM 53300 Introductory Biochemistry (3 cr.; fall)
C. **Physical Chemistry**
a. CHM 37200 Physical Chemistry (4 cr.; spring)
b. CHM 37300 Physical Chemistry (3 cr.; fall)

PHYSICS Selectives

One of these two options:

1. PHYS 23300 Physics for Life Sciences I (4 cr.; both) **and** PHYS 23400 Physics for Life Sciences II (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)

PRE-PROFESSIONAL SELECTIVE (choose one³)

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| 1. ANTH 21200 Culture, Food & Health (3 cr.; both) | 8. SOC 37400 The Health of Americans (3 cr.; fall) |
| 2. ANTH 34000 Cultural Perspectives on Health (3 cr.; both) | 9. SOC 57200 Comparative Healthcare Systems (3 cr.; fall) |
| 3. ANTH 35200 Drugs, Culture & Society (3 cr.; spring) | 10. SOC 57300 Human Side of Medicine (3 cr.; fall) |
| 4. HK 44000 Human Diseases and Disorders (3 cr.; both) | 11. SOC 57400 Social Organization of Healthcare (3 cr.; spring) |
| 5. HK 44500 Epidemiology (3 cr.; both) | 12. SOC 57600 Health and Aging in America (3 cr.; fall) |
| 6. PHIL 27000 Biomedical Ethics (3 cr.; spring) | |
| 7. PHIL 28000 Ethics & Animals (3 cr.; fall) | |

UNIVERSITY CORE and 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 4-15 credits

² Students who select 12901 for General Chemistry must also select CHM 33900 **and** 33901 for the Chemistry Selective. Students who end up with Special Case approval for some other Gen Chem courses may choose the other Chem Selective options.

³ This course may not be used to satisfy the College of Science General Education or Language & Culture requirements.