HEALTH & DISEASE
(for students entering Biology in Fall 2012 or later – revised July 2013)

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
   BIOL 14502 1st Year Biology Lab w/Micro Research Project (2 cr.; spring) 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 Requirement: 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 36600 Principles of Development (3 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. 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 Electives: Six credits from the following:¹
    BIOL 32800 Principles of Physiology (4 cr.; spring)
    BIOL 36600 Principles of Development (3 cr.; spring)
    BIOL 39500 Macromolecules (3 cr.; fall)
    BIOL 41500 Intro. to Molecular Biology (3 cr.; fall)
    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 (various titles) (1-2 cr.; both)
    BIOL 44201 Intro to Protein Expression
    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 49500 Biological & Structural Aspects of Drug Design & Action (3 cr.; spring)
    BIOL 48300 Environmental & Conservation Biology (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)
    BCHM 56100 General Biochemistry I (3 cr.; fall)
    BCHM 56200 General Biochemistry II (3 cr.; spring)
    CHM 53300 Introductory Biochemistry (3 cr.; fall)
    HORT 30100 Plant Physiology (4 cr.; fall)

   Research (494 or 499), (maximum of 3 credits) will count toward the elective requirement.

¹ A 500-level BIOL class (other than 54200) must be taken as part of requirement #13 or #14. The course taken for #13 may not also be used for #14.
² BCHM 56100 or CHM 53300 may count as a chemistry elective or as a biology elective but not both.

Other requirements are on the back of this page.
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)

4. One of these seven options:
   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)
   D. BCHM 56105  General Biochemistry I  (3 cr.; fall)
   E. CHM 49000  Biochemistry for Life Sciences  (3 cr.; fall)
   F. CHM 53300  Introductory Biochemistry  (3 cr.; fall)
   G. CHM 37200  Physical Chemistry  (4 cr.; spring)
   H. CHM 37300  Physical Chemistry  (3 cr.; fall)

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)

PRE-PROFESSIONAL ELECTIVE  (choose one) 3
1. ANTH 21200  Culture, Food & Health
2. ANTH 34000  Cultural Perspectives on Health
3. ANTH 35200  Drugs, Culture & Society
4. HK 44000  Human Diseases and Disorders
5. HK 44500  Epidemiology
6. PHIL 27000  Biomedical Ethics
7. PHIL 28000  Ethics & Animals
8. PSY 25100  Health Psychology
9. SOC 37400  Medical Sociology
10. SOC 57200  Comparative Healthcare Systems
11. SOC 57300  Human Side of Medicine
12. SOC 57400  Social Organization of Healthcare
13. SOC 57600  Health and Aging in Social Context

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 0-12 credits

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