BIOLOGY
(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:
   A. BIOL 32800 Principles of Physiology (4 cr.; spring)
   E. BIOL 41600 Viruses & Viral Diseases (3 cr.; spring)
   B. BIOL 36600 Principles of Development (3 cr.; spring)
   F. BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall)
   C. BIOL 39500 Macromolecules (3 cr.; fall)
   G. BIOL 43600 Neurobiology (3 cr.; fall)
   D. BIOL 41500 Intro to Molecular Biology (3 cr.; fall)
   H. BIOL 43800 General Microbiology (3 cr.; fall)
10. Biology Electives: Twelve credits from the following: must choose at least one from each of Groups A and B, and at least one course from the Laboratory list below.

Group A:
BIOL 39500 Macromolecules (3 cr.; fall)
BIOL 41500 Intro. to Molecular Biology (3 cr.; fall)
BIOL 41600 Viruses and Viral Diseases (3 cr.; spring)
BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall)
BIOL 43600 Neurobiology (3 cr.; fall)
BIOL 43800 General Microbiology (3 cr.; fall)
BIOL 43900 Microbiology Lab (2 cr.; fall)
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 51100 Intro. to X-Ray Crystallography (3 cr.; spring)
BIOL 51600 Molecular Biology of Cancer (3 cr.; spring)

Group B:
BIOL 30100 Human Anatomy & Physiology (3 cr.; fall)
BIOL 30200 Human Anatomy & Physiology (3 cr.; spring)
BIOL 32800 Principles of Physiology (4 cr.; spring)
BIOL 36600 Principles of Development (3 cr.; spring)
BIOL 43200 Reproductive Physiology (3 cr.; Alternate fall)
BIOL 48300 Environmental & Conservation Biology (3 cr.; spring)
BIOL 53700 Immunology (3 cr.; spring)
BIOL 55900 Endocrinology (3 cr.; fall)
BIOL 58000 Evolution (3 cr.; fall)

Laboratory: Choose one option:
BIOL 43900 Microbiology Lab (2 cr.; fall)
BIOL 59100 Field Ecology (4 cr.; alternate fall)

BIOL 44201 Protein Expression (2 cr.; both) and at least one additional credit of BIOL 442xx (1-2 cr.; both) (various titles) or 54200 Neurophysiology (1 cr.; fall)

Research (49400 or 49900), (max of 3 credits) will count toward the 12 credits but will not count toward the Group A or B or the laboratory requirement.

1 Courses listed for the Intermediate Requirement may satisfy #9 above or count as part of the 12 credit requirement (#10), but not both.
2 BCHM 56100 or CHM 53300 may count as a chemistry elective or as a biology elective but not both.
3 If both BIOL 30100 & 30200 are completed, one of the two courses will count toward 12 credit biology elective requirement. The other course will count as free elective. If only BIOL 30100 or 30200 is completed, the credits will count only as free elective credit.

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 eight 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 56100  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)

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 0-20 credits

BIOL  8/13