

GENETICS

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 and Evolution (2 cr.; spring)
9. Intermediate Requirement: Choose one of these eight options:
(Genetics majors may not use BIOL 43800, General Microbiology, to satisfy this requirement)
 - 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 44100 Senior Seminar in Genetics (1 cr.; spring)
11. BIOL 48100 Eukaryotic Genetics (3 cr.; spring)
12. **Chemistry Selective:** ² One of these three courses:
 - a. BCHM 56100 General Biochemistry I (3 cr.; fall) **or**
 - b. CHM 33900² Biochemistry: A Molecular Approach (3 cr.; Spring) **or**
 - c. CHM 53300 Introductory Biochemistry (3 cr.; fall)
13. BIOL 44201¹ Introductory Module: Protein Expression plus two additional modules of BIOL 442xx¹ (1-2 cr.; both) (various titles) **or** 54200¹ Neurophysiology (1 cr.; fall)
14. **Biology Selectives:** Six credits of the following. One of the two courses must be a 500 level Biology:

BIOL 43800	General Microbiology (3 cr.; fall)	BIOL 59500	Epigenetics in Human Disease (3 cr.; fall)
BIOL 44400	Human Genetics (3 cr.; fall)	BIOL 59500	Genetics and –Omics of Host-Microbe Interactions (3 cr.; fall)
BIOL 47800	Intro to Bioinformatics (3 cr.; fall)	BIOL 59500	Theory of Molecular Methods (3 cr.; fall)
BIOL 51600	Molecular Biology of Cancer (3 cr.; spring)	AGRY 53000	Plant Genetics (3 cr.; fall)
BIOL 54100	Molecular Genetics of Bacteria (3 cr.; fall)	ANSC 51100	Population Genetics (3 cr.; fall)
BIOL 55001	Eukaryotic Molecular Biology (3 cr.; fall)		
BIOL 58000	Evolution (3 cr.; spring)		

CHEMISTRY

1. **General Chemistry:**
 1. CHM 12901² General Chemistry with a Biological Focus (5 cr.; fall)
2. **Organic Chemistry Selectives:** One of these two options:
 1. 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)
 2. 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)

¹ Three credits of research, approved by the Undergraduate Studies Committee, may replace some or all of these modules.

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.

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)

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 9-21 credits