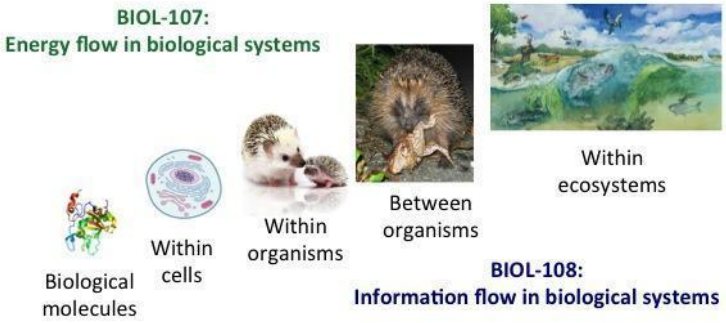
2023

BIOLOGY AT VASSAR

A Guide for First Year Students



Biology (BIOL) 107: Energy Flow in Biological Systems. Fall 2023 and Spring 2024

Course Description: All life requires the transformation of energy, from plant growth to animal behavior. The focus of this course is to dig deep into the flow of energy through different levels of biological systems, from within cells (e.g. cellular respiration and photosynthesis) to the biosphere (e.g. trophic energy transfer). We examine energy transformation, energy flow, and energy interactions at all levels of biological organization. At an ecosystem level, we discuss the flow of energy in biogeochemical cycles and the implications for energy flow in the biosphere under global change. *Lecture sessions are 50 minutes long, three times a week plus one 50-minute discussion session a week.*

Biology (BIOL) 108: Information Flow in Biological Systems. Fall 2023 and Spring 2024

Course Description: The focus of this course is on the flow of information through different levels of biological systems, from within cells to the biosphere. At a cellular level, we examine the flow of information within cells (e.g., gene expression) and between cells (e.g., hormones). We then shift to the population and community levels to explore how information is transferred between organisms (e.g., communication, trophic interactions). At an evolutionary level, we discuss the flow of information between (e.g., reproduction) and across generations (e.g., evolutionary mechanisms), as well as the implications for information flow in the biosphere under global change. *Lecture sessions are 50 minutes long, three times a week.*

Biology 108 has a **3-hour lab per week**. The overarching theme of the laboratory experience is the consequence of global change on information flow. Students acquire basic laboratory skills by collecting organisms from outdoors and analyzing the sequence of a portion of the genome for species identification. Students learn experimental design, collect and analyze data, connect findings to the primary literature, and present findings in a professional written format. **Pre-requisite:** Students must complete Biology 107 before enrolling in Biology 108.

Information about AP and IB exam scores: Students with an AP Biology exam score of 5 or an International Baccalaureate (IB) Biology HL exam score of 6 or 7 may choose to place out of Biology 107. Students must confirm their AP or IB Biology credit with the Coordinator for Biology 108, Prof. Mary Ellen Czesak. Students with an IB SL (standard level) Biology exam score of 6 or 7 cannot opt out of Biology 107, as Vassar College does not transfer credit from IB SL exams. Students who completed AP Biology, IB Biology, or other

advanced courses and either did not take an exam or did not score high enough to place out of Biology 107 may opt to take a departmental placement exam. *However, we strongly encourage all students to complete both Biology 107 and Biology 108 to be best prepared for our 200-level courses.* Questions about placement should be directed to Prof. Mary Ellen Czesak at maczesak@vassar.edu

Enrollment: Any first-year student who cannot enroll in Biology 107 in the fall due to conflicts with other courses or full course enrollment ***should not panic***. Many students take it in the spring semester or wait until their sophomore year and still have plenty of time to complete the biology major or pre-health requirements.

Do you have questions about the introductory-course sequence in Biology? Please feel free to contact Prof. Mary Ellen Czesak or consult our web page: https://biology.vassar.edu/

Biology Major Requirements

Biology 107 - Energy Flow in Biological Systems, with accompanying discussion session

Biology 108, with accompanying lab - Information Flow in Biological Systems

Chemistry 125, with accompanying lab

(3) 200-level Biology courses from two content areas

(2) 300-level Biology courses

(0.5) unit of Intensive

(2) additional courses in consultation with your adviser

200-level Biology course requirement: Biology offers a diverse set of 200-level courses (intermediate-level). 200-level Biology courses have lectures and a laboratory session each week. Courses fall within one of two content areas:

Content Area 1	Content Area 2
Plant Physiology and Development	Cellular Structure and Function
Animal Physiology	Developmental Biology
Human Physiology	Molecular Genetics
Microbiology	Genetics and Genomics
Plant Diversity and Evolution	Evolutionary Genetics
Animal Structure and Diversity	Biochemistry
Ecology	Epidemiology

Intensive requirement: Intensives are non-classroom based experiential learning opportunities in which students can work with faculty individually or in small groups. These experiences may include research in faculty labs, project-based learning, activities in partnership with community organizations, or skills-based experiences.