

Biology (BIOLOGY)

Courses

BIOLOGY 510. Plant Systematics. 4 Credits.

An introduction to the diversity of vascular plants, with an emphasis on flowering plants. Lectures cover both organismal and phylogenetic/evolutionary perspectives on plant systematics, including the use of genetic and genomic data for understanding plant evolution. The laboratory presents a survey of vascular plant diversity, covering structural characteristics of major plant families and the identification of seed plants of Wisconsin to the species level.

P: graduate status

Spring.

BIOLOGY 511. Plant Physiology. 4 Credits.

General physiology of vascular plants within the context of a plant life cycle: seed dormancy and germination, metabolism, transport systems, mineral nutrition, patterns of plant growth and development, growth regulators, reproduction and senescence.

P: gr st.

Fall Only.

BIOLOGY 512. Mycology. 4 Credits.

Broad taxonomic survey of fungi. Morphology, reproduction, physiology, genetics, evolution, and ecology. Role in nutrient cycling, plant disease, human welfare and biotechnology. Techniques in collection, identification, pure culture isolation, and nucleic acid applications.

P: gr student

Fall Odd.

BIOLOGY 520. Field Botany. 3 Credits.

Identification and natural history of plants indigenous to northeastern Wisconsin.

P: graduate status

Fall Only.

BIOLOGY 522. Environmental Microbiology. 4 Credits.

This course will focus on the diversity and role of microorganisms in diverse and complex environments, including the use and management of these organisms for the benefit of ecosystems and society.

P: graduate status

Spring.

BIOLOGY 541. Ichthyology. 4 Credits.

An examination of the biology of fishes including classification, phylogeny, functional morphology and population characteristics. Aspects of the ecology of the fishes will be studied in relation to behavior, distribution, diversity and production in freshwater environments

Spring Even.

BIOLOGY 542. Ornithology. 3 Credits.

Overview of avian biology, emphasizing adaptation and ecology. Identification of North American bird species and other avian families. Region's most interesting birding areas.

P: graduate status

Spring Even.

BIOLOGY 543. Mammalogy. 3 Credits.

Comprehensive study of mammals, including systematics, anatomy, physiology, behavior, and ecology. Laboratory studies include work with specimens from the Richter Natural History Museum.

P: gr st.

Spring Odd.

BIOLOGY 553. Invertebrate Biology. 4 Credits.

Survey of invertebrate animals. A phylum-by-phylum survey examining defining characters, structure, function, life cycles, and ecology of invertebrate animals. Lab focuses on identification of invertebrates living in Wisconsin.

P: gr st.

Fall Odd.

BIOLOGY 555. Entomology. 3 Credits.

Structure, function, diversity, and ecology of insects, as well as their impact on human society. Lab develops ability to identify Wisconsin insects, both in the field and by examining microscopic anatomy.

P: gr st.

Fall Even.

BIOLOGY 602. Advanced Microbiology. 4 Credits.

Detailed study of microorganisms from viruses to fungi in their environment. Study of both free-living and pathogenic organisms and their degrading abilities.

P: gr st.

Spring Even.

BIOLOGY 607. Molecular Biology. 3 Credits.

Molecular approaches to biological problems, emphasizing study of informational macro molecules. Topics include replication, control, expression, organization, and manipulation of genes; RNA processing; protein processing; transposons; oncogenes, growth factors; genetic control of development and the immune system.

P: gr st.

Spring Odd.

BIOLOGY 608. Molecular Biology Laboratory. 1 Credit.

Molecular biology of nucleic acids and the techniques that form the basis of biotechnology. Topics include electrophoresis, restriction mapping, hybridization, plasmid analysis, and DNA cloning (recombinant DNA library construction, screening, and mapping).

P: gr st.

Spring Odd.

BIOLOGY 699. Travel Course. 1-6 Credits.

Travel courses are conducted to various parts of the world and are led by one or more faculty members. May be repeated to different locations.

P: cons of instr & prior trip arr & financial deposit.