

Course Abstract

If you need accommodations due to a disability, contact Disability Services in Edison Hall Room 100, 732.906.2546.

To foster a productive learning environment, the College requires that all students adhere to the Code of Student Conduct which is published in the college catalog and website.

Course ID and Name: BIO 124 General Biology II

Department: Natural Sciences

Chairperson: Dr. Donna Howell
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Course Coordinator: Dr. George Allen
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Prerequisites: Biology 123 with a grade of “C” or better
Co-requisites: N/A

Course Description:

A survey of plant and animal taxonomy, anatomy and physiology; evolutionary theory and principles of ecology. Laboratory sessions include dissections.

General Education Status: Science

Credits: 4

Lecture Hours: 3

Lab hours: 3

Learning Outcomes:

Upon successful completion of the course, students will be able to

1. demonstrate a knowledge of the theory of natural selection and how it explains the adaptations of organisms to their environment.
2. understand taxonomic relationships and compare the anatomical, physiological, and behavioral adaptations of selected groups of plants & animals.
3. define appropriate ecological terms, recognize the interrelationship of organisms with each other and their environment and recognize the impact of human activities on ecosystems and the evolutionary process.
4. demonstrate proficiency in observational, dissection & microscopy skills.
5. Understand how the scientific method is applied to gain knowledge about evolution, ecology and physiology of organ systems.

Course Content Areas:

Evolutionary Theory: Natural Selection, directional selection, stabilizing selection, disruptive selection, sexual selection, evidence for evolution, fossil record, biogeography, comparative biochemistry, comparative anatomy, developmental homologies, population genetics, gene flow, genetic drift, macroevolution, allopatric speciation, sympatric speciation.

Plant Taxonomy and Anatomy: Evolutionary history of plants, bryophytes, seedless vascular plants, gymnosperms and angiosperms, plant structure (roots, stems, leaves, flowers) and function, monocots vs. dicots

Animal Structure and Function: Tissue organization, homeostasis, metabolic rates, digestive system, circulatory system, respiratory system, excretory system, reproductive system, immune system, and nervous system.

Ecology: Abiotic vs. biotic factors, types of biomes, productivity, laws of thermodynamics and the flow of energy through ecosystems, biogeochemical cycles, ecological succession, ecological niches, community ecology, community relationships (predator-prey, parasitism, commensalism, mutualism)