

# 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 118 Biology II**

### **Department: Natural Sciences**

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**Prerequisites:** BIO 117 Biology I

**Co-requisites:** none

**Course Description** A continuation of Biology 117. Emphasis is on supporting life processes, animal systems, evolution, ecosystems and communities.

**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. explain the theory of evolution using current scientific evidence.
2. identify the anatomical, physiological, and behavioral characteristics of selected groups of plants & animals.
3. define appropriate ecological terms and summarize the interrelationships in communities and ecosystems.
4. demonstrate proficiency in observational, dissection & microscopy skills.
5. use the scientific method to collect and evaluate data to draw valid conclusions and recognize the historical value of science and the tentative nature of biological theories.

### **Course Content Areas:**

History and origins of the earth: origin of life, geologic time scale, mechanisms of evolution, gene pools, factors affecting gene frequencies, mutation, genetic drift, natural selection, speciation, evidences for evolution, fossil record, homologous and analogous

structures, embryology, comparative anatomy, biochemistry and molecular evidences, biogeographical parameters.

Important life processes: nutrition and digestion, autotrophic, heterotrophic, digestive processes, digestive structural adaptations, gaseous exchange, respiratory surfaces, exchange of gases, respiratory structural adaptations, respiratory pigments, respiratory regulation, movement of materials, animal circulatory systems, open and closed systems, plant transport, translocation, root pressure, transpiration, absorption, control mechanisms, homeostasis, endocrine system, plant growth substances, nervous system, evolution of nervous systems, CNS, PNS, reproduction, asexual reproduction, sexual reproduction, animal reproductive patterns, plant reproductive patterns, animal development and growth.

Ecology: Historical perspectives, importance, populations, competition, limiting factors, survival strategies, communities, symbiosis, predator-prey interactions, ecosystems, abiotic factors, biotic factors, biogeographical cycles, feeding interactions, trophic levels.

Major ecosystems: terrestrial ecosystems, tundra, taiga, deciduous forest, temperate grasslands, savannas, tropical rain forest, desert, marine ecosystems, coastal ecosystems, estuaries, intertidal zones, fresh water ecosystems, lakes, ponds, streams, rivers, wetlands, marshes, swamps, bogs.