

# **COURSE OUTLINE**

**BIOL-102**

**General Biology II**

**4 Semester Hours**

**Science Core Course**

## **HOWARD COMMUNITY COLLEGE**

### **Description**

This course will enable the student to understand and recognize the evolutionary and environmental relationships that exist between all organisms. The student will be exposed to and will work with representative organisms of all five kingdoms to establish the concept of interrelatedness of all living organisms. Topics such as animal behavior and ecology will be utilized to develop this concept. Prerequisite: BIOL-101. (3 hours lecture, 3 hours lab)

### **Statement on General Education and Liberal Learning**

A liberal education prepares students to lead ethical, productive, and creative lives and to understand how the pursuit of lifelong learning and critical thinking fosters good citizenship. General education courses form the core of a liberal education within the higher education curriculum and provide a coherent intellectual experience for all students by introducing the fundamental concepts and methods of inquiry in the areas of mathematics, the physical and natural sciences, the social sciences, the arts and the humanities, and composition. This course is part of the general education core experience at Howard Community College.

### **Overall Course Objectives**

Upon completion of this course, the student will be able to:

1. Identify the major contributions to evolutionary theory made by Charles Darwin, Alfred Wallace, Karl Linnaeus, George Cuvier, Charles Lyell, and Jean Baptiste de Lamarck.
2. Describe the major evidences for evolution.
3. Identify the major categories of evolution.
4. Explain the evolutionary process.
5. Describe the process of chemical evolution and the origin of life.
6. Describe the basic structure and function of viruses, and the major aspects of viral life cycles.
7. Describe the Monera in terms of structure, physiological characteristics, and roles in the ecosystem.
8. Describe the Protista in terms of general characteristics, characteristics of their phyla and their modes of reproduction.
9. Describe the general characteristics of the Kingdom Fungus and characteristics of the constituent Fungus divisions.
10. Describe the general characteristics of the Bryophyta, including the life cycle of a moss.
11. Describe the general characteristics of the Tracheophyta, including the life cycle of a fern and a conifer.

12. Describe the general characteristics of the Animalia, including specific details regarding the anatomy and physiology of the Porifera, Cnidaria, Platyhelminthes, Nematoda, Mollusca, Annelida, Arthropoda, Echinodermata, Chordata and Vertebrata.
13. Identify the major features of plant structure, function and variation.
14. Explain the major concepts of ecology including population growth, niche, habitat, competition and succession.

### **Major Topics**

- I. Forces of Evolution
- II. Evidences for Evolution
- III. The Evolutionary Process
- IV. Origin of Life
- V. Viruses
- VI. Monera
- VII. Protista
- VIII. Fungi
- IX. Plant Diversity: Bryophyta
- X. Plant Diversity: Tracheophyta
- XI. Animal Diversity: Sponges to Roundworms
- XII. Animal Diversity: Mollusks to Chordates
- XIII. Plant Structure and Function
- XIV. Ecology

### **Course Requirements**

Grading/exams: Grading procedures will be determined by the individual faculty member but will be calculated on the basis of exams, lab practical, and a lab book.

Oral Communication: Students will be required to give oral presentations of laboratory results during laboratory periods.

### **Other Course Information**

This course is a Science core course, a Science elective, and an Arts and Sciences elective.