

COURSE OUTLINE

BIOL-105

Environmental Science

3 Credits

Science Core Course

HOWARD COMMUNITY COLLEGE

Description

Following the successful completion of Biology 105, the student will be able to describe the energy, chemistry and climate that make up the earth and its atmosphere. The student will be able to differentiate among the various biomes on earth and recognize the diversity of organisms living in these ecosystems. The study of pollution, natural resources, conservation, and the impact man has had on his environment will enable the student to relate environmental science to how our world works, and what we can do to protect it. Prerequisite: ENGL-096 or ENGL-086. (3 hours lecture)

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 ecosystems of the world.
2. Discuss the cycling of carbon, nitrogen, phosphorus, and water within an ecosystem.
3. Explain the flow of energy through ecosystems.
4. Apply the principles of population growth to the problems associated with overpopulation.
5. Discuss the search for energy, the varied sources of energy, the declining energy reserves and the environmental problems associated with its use.
6. Identify the importance of natural resources like water, soil, minerals and wildlife.
7. Describe the source, effect, and control of air, water, and soil pollution.
8. Discuss the impact air pollution has on global atmospheric changes.
9. Identify the benefits and problems of pesticide use.
10. Discuss the problem of solid and hazardous waste.
11. Explain the current clean up and management policies for waste.
12. Apply all of the above to future environmental problem solving.

Major Topics

- I. Our Impact on the Environment
- II. Ecosystems and Energy
- III. Ecosystems and Living Things
- IV. Ecosystems and the Physical Environment
- V. Major Ecosystems of the World
- VI. Understanding Population Growth
- VII. Fossil Fuels
- VIII. Nuclear Energy
- IX. Water: A Fragile Resource
- X. Soils and Their Preservation
- XI. Minerals: A Nonrenewable Resource
- XII. Wildlife: Our Plant and Animal Resources
- XIII. Air Pollution
- XIV. Global Atmospheric Changes
- XV. Water and Soil Pollution
- XVI. The Pesticide Dilemma
- XVII. Solid and Hazardous Waste
- XVIII. Tomorrow's World

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member but will include the following: tests, homework assignments, and final exam.

Writing: Specific writing assignments will be determined by the individual faculty member.

Other Course Information

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