

**College of Science and Health**  
**ENVIRONMENTAL SCIENCE & GEOGRAPHY**  
**Course Outline**

1. TITLE OF COURSE AND COURSE NUMBER: Environmental Foundations  
ENV 110, 4 credits
  
2. DESCRIPTION OF THE COURSE: An introduction to the study of the environment from the viewpoints of several disciplines of the natural sciences, the social sciences and humanities. These disciplines include biology, chemistry, physics, geology, soils, political science, economics, law, anthropology, sociology, and ethics. The course stresses a holistic view of the environment. The companion workshops include field trips and hands-on experiences that complement the materials in the lecture.
  
3. COURSE PREREQUISITES: None
  
4. COURSE OBJECTIVES: To introduce the subject of environmental science in an interrelating and multi-disciplinary way.
  
5. STUDENT LEARNING OUTCOMES:  
Students should be able to:
  1. Effectively express themselves in written and oral form about topics and issues in environmental science
  2. Demonstrate the ability to think critically about environmental and scientific issues
  3. Locate information, evaluate the reliability of that information, and use that information to draw conclusions about environmental topics and issues
  4. Demonstrate the ability to integrate scientific knowledge and sociological ideas in a coherent and meaningful manner in discussions concerning topics of environmental interest
  5. Work effectively with others on a class project
  6. Explain the basic principles of ecology
  7. Analyze human interaction with the environment
  8. Demonstrate an appreciation for the ethical and aesthetic values of the environment
  9. Analyze the political and economic processes and structures influencing environmental decisions
  10. Express the beginnings of a global consciousness for environmental concern
  
6. TOPICAL OUTLINE OF THE COURSE CONTENT:  
Lecture Outline:
  - I. Introduction
  - II. The scientific method; systems

- III. Ecology and ecosystems
- IV. Energy
- V. Environmental geology and mineral resources
- VI. Water resources
- VII. Water pollution
- VIII. The atmosphere and air pollution
- IX. Political science
- X. Environmental law
- XI. Population and food
- XII. Urbanization and land use
- XIII. Human health and the environment
- XIV. Environmental economics
- XV. Environmental ethics

Lab(workshop) Outline:

Field trip to a water treatment plant (Passaic Valley)  
Field trip to a planned community (Radburn)  
Field trip to a Superfund site (Bayer/Harmon Colors)  
Campus geology walk  
Topographic maps  
Groundwater flow  
Ecological sampling  
A lake ecosystem: Oldham Pond (two weeks)  
Film: "Rachel Carson's Silent Spring"  
Film: "After the Warming"  
Film: "Affluenza"

7. GUIDELINES/SUGGESTIONS FOR TEACHING METHODS AND STUDENT LEARNING ACTIVITIES:

Lecture: Lectures, class and panel discussions, library research, and exercises  
Lab (workshops): All workshops are designed as "hands-on" experiences. Students work individually or in small groups of 2-3 students. Activities include field observation, data collection, analysis, and evaluation, and report preparation. There is also a semester-long field observation and journal keeping activity which includes an "environmental activism" component.

8. GUIDELINES/SUGGESTIONS FOR METHODS OF STUDENT ASSESSMENT (STUDENT LEARNING OUTCOMES):

Lecture: Three (3) one-hour exams and one final exam; journal  
Lab (workshop): Attendance at workshops and performance on assignments

9. SUGGESTED READINGS, TEXTS, OBJECTS OF STUDY:

Lecture: Cunningham, Cunningham, and Saigo, Environmental Science: A Global Concern, 8th ed., WCB-McGraw Hill, 2005

Lab (workshops): Individual handouts are prepared for each workshop.

10. BIBLIOGRAPHY OF SUPPORTIVE TEXTS AND OTHER MATERIALS:

Living in the Environment, Miller, G.T., 13th ed., Wadsworth, Belmont, Ca., 2004.

Standard Methods, APHA/AWWA/WPCF, 20th ed., APHA, Washington, D.C., 1998

Methods Manual: Hach Direct Reading - Environmental Laboratory, Hach Chemical Co., Ames, IA 1977

Soil Survey of Passaic County, New Jersey, USDA, Soil Conservation Service, 1975

Soil Survey of Morris County, New Jersey, USDA, Soil Conservation Service, 1976

Introduction to Physical Geography, A. N. Strahler, 3rd ed., John Wiley and Sons, New York, 1973

11. PREPARER'S NAME AND DATE: Richard Pardi, Spring 1990

12. ORIGINAL DEPARTMENTAL APPROVAL DATE: Spring 1990

13. REVISER'S NAME AND DATE: Karen Swanson, Fall 2004

14. DEPARTMENTAL REVISION APPROVAL DATE: Fall 2004