
Prepared by the Department of Natural Sciences and Applied Technology

Date of Departmental Approval: February 15, 2017

Date Approved by Curriculum and Programs: February 22, 2017

Effective: Fall 2017

1. Course Number: ENV118/ENV118L

**Course Title: Introduction to Environmental Science/
Introduction to Environmental Science Laboratory**

2. Description: A study of environmental interactions and the impact of humans on the environment. The use of natural resources, including land, air, water, mineral and biological resources, is examined. Local and global examples are presented to enable students to better understand and evaluate contemporary environmental problems and the application of science to their solution. The corresponding laboratory component provides students with the practical experience of measuring, recording and interpreting environmental data. Interdisciplinary knowledge is used to understand environmental problems. (3 class hours/2 laboratory hours)

3. Student Learning Outcomes:

Upon successful completion of this course, students are able to do the following:

- Explain the basic theory and principles of environmental science (including biodiversity, sustainability, resource utilization, climate change, plate tectonics).
- Identify and explain environmental interactions including population dynamics and abiotic/biotic systems.
- Define key environmental terms and use them in proper context in both written and verbal forms of communication.
- Recognize and evaluate contemporary environmental problems to understand how their decisions and behaviors impact local and global sustainability.
- Apply an interdisciplinary approach (using economics, political science, sociology, and physical and natural sciences) to understand environmental problems.
- Use appropriate techniques in the laboratory, collect and analyze meaningful data, and present clearly and cogently written laboratory results utilizing Standard American English.
- Relate the corresponding laboratory experiments to contemporary environmental problems.
- Measure, record and interpret environmental data using a variety of field and laboratory instruments and technologies.
- Use instruments interfaced with calculators and computers as tools in measuring and analyzing environmental data.
- Use appropriate quantities and units to describe observations.
- Use word processing and spreadsheet software to prepare and present laboratory reports and lecture assessments.

4. Credits: 4 credits

5. Satisfies General Education Requirement: Natural and Physical Science

6. Prerequisite: MAT020 (Prealgebra) or MAT025 (Prealgebra) or satisfactory basic skills assessment scores; **Co-requisite:** ENL101(English Composition I)

7. Semester(s) Offered: Fall, Spring, Summer

8. Suggested General Guidelines for Evaluation:

- Exams and quizzes
- Project (presentation or paper)
- Field and laboratory exercises
- Participation in class and laboratory discussions and assignments

9. General Topical Outline (Optional):

- I. Introduction and Sustainability
- II. Scientific Method
- III. Matter & Energy
- IV. Ecosystems
- V. Evolution & Extinction
- VI. Biodiversity & Conservation
- VII. Human Population
- VIII. Climate & Climate Change
- IX. Land Resources and Agriculture

- X. Geological Processes, Soils and Minerals
- XI. Water Resources & Pollution
- XII. Air and Air Pollution
- XIII. Renewable and Non-renewable Energy
- XIV. Solid and Hazardous Waste
- XV. Environmental Health Hazards
- XVI. Environmental Economics, Equity and Policy

Laboratory

- I. Lab Safety
- II. Mathematics for the Lab
- III. Measurements
- IV. Soils
- V. Field Biology
- VI. Water Chemistry
- VII. Instrumentation
- VIII. Energy
- IX. Taxonomy
- X. Air and Greenhouse gases