EASTERN ARIZONA COLLEGE
Environmental Biology
Course Design
2015-2016

Course Information
Division: Science
Course Number: BIO 105
Title: Environmental Biology
Credits: 4
Developed by: Michael McCarthy
Lecture/Lab Ratio: 3 Lecture/3 Lab
Transfer Status: ASU NAU UA

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Activity Course: No
CIP Code: 26.0100
Assessment Mode: Pre/Post Test (50 Questions/100 Points)
Semester Taught: Fall
GE Category: Lab Science
Separate Lab: Yes
Awareness Course: No
Intensive Writing Course: No

Prerequisites
ENG 091 with a grade of “C” or higher or reading placement test score as established by District policy

Educational Value
Students in preparation to become elementary teachers. Students wishing to transfer to the university, those interested in issues effecting the environment.

Description
Fundamentals of ecology and their relevance to human impact on natural ecosystems. A liberal studies course for non-science majors with an emphasis on contemporary issues.

Supplies
Composition Books
**Competencies and Performance Standards**

1. **Acquire a basic understanding of environmental forces that affect all living creatures on earth.**

   **Learning objectives**
   
   *What you will learn as you master the competency:*
   
   a. Show an increased awareness of environmental issues.
   b. Classify environmental problems and laws of nature.
   c. Identify the need to have and to promote knowledge of environmental concepts.
   d. Acquire knowledge of the Ecology of Natural Systems: energy relationships, the ecological niche, nutrient cycles, and major ecosystems of the earth.

   **Performance Standards**
   
   *You will demonstrate your competence:*
   
   o in presentation of an organized summary of the assigned topic
   o by completion of the written responses on evaluation tools

   *Your performance will be successful when:*
   
   o learner participates in class discussions and activities
   o learner adheres to the stipulated time schedule
   o learner realizes that any action effecting one species will affect other species
   o learner understands the processes that interconnect all creatures

   2. **Develop an in-depth understanding of a specific environmental topic.**

   **Learning objectives**
   
   *What you will learn as you master the competency:*
   
   a. Acquaint self with the ecosystems and natural growth: population growth, environmental resistance, and natural ecosystems.
   b. Predict future populations and consequences of population density.
   c. Acknowledge the sources of energy: fossil fuel sources & availability
   d. Acquaint self with nuclear energy and the environment: radioactivity, safety in nuclear fission reactors, the disposal of radioactive wastes, & the future of nuclear power.
   e. Analyze food production and world hunger.
   f. Analyze the control of pests and weeds.
   g. Acquire knowledge on Water - Resources and Pollution, Air Pollution, and Solid Wastes.

   **Performance Standards**
   
   *You will demonstrate your competence:*
   
   o in completion of a research paper on assigned environmental topic: sources of energy, nuclear energy and the environment, food production and world hunger, and control of pests and weeds
   o in presentation to the class summarizing the information gained through developing the research paper
   o in completion of documentation of activity in a "lab journal"
   o in completion of the assigned project

   *Your performance will be successful when:*
   
   o learner participates in class activities and projects
3. **Develop a concern for environmental issues and acquire an increased awareness of the role of science in his/her daily life.**

**Learning objectives**  
*What you will learn as you master the competency:*  
a. Develop positive attitudes and values toward the environment.  
b. Enhance civic and social responsibility toward environmental issues.  
c. Analyze information about environmental issues that relate to the learner's own life.  
d. Transfer an environmental concern into a personal action to the benefit of the issue.

**Performance Standards**  
*You will demonstrate your competence:*  
- in completion of the journal documented summaries of newspaper articles related to science and the environmental issues  
- in completion of report on identifying various library and on-line resources  

*Your performance will be successful when:*  
- learner participates in class activities, field trips and projects  
- learner maintains perfect attendance to all lab classes (except under special circumstances)  
- learner cooperates with others in the group to achieve an objective of a project  
- learner discusses information he/she acquires from the newspaper articles

**Types of Instruction**  
Classroom Presentation  
On Campus Laboratory and field trips

**Grading Information**  

**Grading Rationale**  
Each student is required to complete a research paper, following a specific format. Perfect attendance in the fifteen labs is required. Many of the labs are field trips. These labs introduce the students to different government agencies that deal with the environment; others are direct analysis of the environment. Essay questions, short answer, and presentation of the assigned research topic are also required. Pre test/Post test assessment will be given. Post test/final will count as 10% of the course grade.

**Grading Scale**  
A 90 - 100%  
B 80 - 89%  
C 70 - 79%  
D 60 - 69%  
F 59% or less