

# Anoka-Ramsey Community College

## **BIOL 1103: Environmental Science Lecture**

### **A. COURSE DESCRIPTION**

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 03 - Natural Science, Goal 10 - People/Environment

(MnTC Goals 3 and 10)

Introduction to the basic characteristics and dynamics of the ecosystems. The effects of the increasing and changing human demands on our environment are explored. Includes an environmentally based lab-like experience. An optional 1-credit lab is also offered.

### **B. COURSE EFFECTIVE DATES:** 12/20/2014 - Present

### **C. OUTLINE OF MAJOR CONTENT AREAS**

1. Ecosystem structure and function, including:
  - a. the process of energy flow
  - b. the process of material cycling
  - c. population dynamics
2. Nature of biological communities, including:
  - a. the types of significance of species interactions
  - b. the nature of ecological succession
  - c. the concept of biomes
3. Application of evaluative thinking in classroom studies, including:
  - a. hypothesis formation and the objective collection and evaluation of information
  - b. objective means of evaluating claims and positions
4. Economically and ecologically important resources, including:
  - a. renewable resources
  - b. nonrenewable resources
  - c. intangible resources
5. Evaluate and describe significant environmental dilemmas associated with activities of human societies, including:
  - a. the consequences of continued exponential growth of human populations
  - b. the potential for global climate change
  - c. ecosystem destruction
  - d. the loss of biological diversity
  - e. defining and defending a reasoned personal position on how to contend with the above problems
6. Describe the concept of sustainability, including:
  - a. identification of both sustainable and non-sustainable practices
  - b. the economic, ecological, and social dimensions of sustainability
  - c. creating a model of sustainable future
7. Describe the options for effecting change in our society, including:
  - a. those options open to individuals and groups
  - b. the role of government and the political system
8. Explain the concept of environmental ethics, including:
  - a. contrasting the world views of native peoples with the dominant world view of society today
  - b. the concepts of racial and intergenerational justice
  - c. identifying values and precepts that would be compatible with an ethic that upheld environmental integrity

### **D. LEARNING OUTCOMES (General)**

1. Demonstrate an understanding of human influences on the environment and steps that can be taken to achieve sustainability
2. Demonstrate an understanding of science as a process, as introduced in a lab-like experience
3. Establish an understanding of the basic structure and function of various natural ecosystems and of human adaptive strategies within them
4. Demonstrate an understanding of patterns and interrelationships of bio-physical and socio-cultural systems
5. Describe the basic institutional arrangements with environmental and natural resource challenges that are currently changing
6. Evaluate critically environmental and natural resource issues while demonstrating an understanding about the interrelationships, ecosystems, and institutions involved within them
7. Establish and defend the actions they would take on environmental issues
8. Demonstrate an understanding of major areas of course content

## **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

### Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
3. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

### Goal 10 - People/Environment

1. Explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems.
2. Discern patterns and interrelationships of bio-physical and socio-cultural systems.
3. Describe the basic institutional arrangements (social, legal, political, economic, religious) that are evolving to deal with environmental and natural resource challenges.
4. Evaluate critically environmental and natural resource issues in light of understandings about interrelationships, ecosystems, and institutions.
5. Propose and assess alternative solutions to environmental problems.
6. Articulate and defend the actions they would take on various environmental issues.

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

None noted