

# Anoka-Ramsey Community College

## BIOL 2209: General Ecology

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 3

OJT Hours/Week: \*.\*

Prerequisites:

This course requires all three of these prerequisite categories

1. One of these two

BIOL 1106 - Principles of Biology I (Minimum grade: 2.0 GPA Equivalent)

A score of 3 on test Advanced Placement Biology

And

2. BIOL 1107 - Principles of Biology II (Minimum grade: 2.0 GPA Equivalent)

And

3. Any one of these 10

A score of 3 on test Adv Placement Calculus AB

A score of 3 on test Adv Placement Calculus BC

A score of 75 on test Accuplacer College Level Math

A score of 265 on test Accuplacer NG Advanced Algebra Functions

A score of 100 on test Mathematics Guided Self Placement

A score of 2.8 on test HS GPA for placement into Math 1201/1210

A score of 2.8 on test HS GPA for placement into Math 1400

A score of 22 on test ACT Math

MATH 1114 - Introduction to Statistics (Minimum grade: 2.0 GPA Equivalent)

MATH 1200 - College Algebra (Minimum grade: 2.0 GPA Equivalent)

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

(MnTC Goal 3)

Prerequisites: This course requires these prerequisites with a minimum grade of C:

BIOL 1106 or equivalent, AND BIOL 1107 (or consent of instructor), AND MATH 1114 or MATH 1200

Recommended Skills, Abilities, or Coursework: College-level mathematics, reading and writing

Fundamental principles of ecology, including examining interrelationships of plants and animals with their environment. Course will consider principles of multiple ecological scales, including organismal, population, community, ecosystem, and global ecology.

**B. COURSE EFFECTIVE DATES:** 01/16/2007 - Present

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

1. History and Development of Ecology as a Science
2. The Physical Environment
3. Adaptation and Natural Selection
4. Population Ecology: Properties and Growth
5. Life History and Intraspecific Population Regulation
6. Behavioral Ecology
7. Species Interactions
8. Community Ecology: Structure and Dynamics
9. Ecosystem Ecology: Energetics, Decomposition, Nutrient Cycles, and Biogeochemical Cycles
10. Patterns of Biological Diversity
11. Selected Ecological Biogeography
12. Disturbance and Climate Change

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

1. Understand and apply knowledge of the relationships of organisms with their environment at the level of the individual, population, community, ecosystem, and biosphere
2. Use critical thinking skills to understand, evaluate, and analyze ecological processes and interactions
3. Demonstrate ability to select a sampling method, plan a sampling regime, and apply relevant statistical tests to ecological data
4. Formulate a hypothesis and conduct and analyze an ecological experiment
5. Organize, draft, edit, and revise formal scientific writing
6. Read, interpret, incorporate, and cite information and ideas from primary literature into writing
7. Utilize and understand the value to human society of ecological modeling, monitoring, and restoration

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

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

### **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

### **G. SPECIAL INFORMATION**

None noted