

# Bemidji State University

## **BIOL 1120: General Biology: Evolution And Ecology**

### **A. COURSE DESCRIPTION**

Credits: 3

Lecture Hours/Week: 4

Lab Hours/Week: 2

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 02 - Critical Thinking, Goal 03 - Natural Science, Goal 10 - People/Environment, Goal 03 - Natural Science, Goal 10 - People/Environment

A general introduction to biology with an emphasis on evolution, ecology, and the diversity of life. Intended for nonbiology majors. Includes laboratory simulations and field exercises. Liberal Education Goal Area 3 and 10.

### **B. COURSE EFFECTIVE DATES: 05/18/2001 - Present**

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

1. How Populations Evolve
2. What is Biology, Life, Evolution?
3. Evidence of Evolution
4. Natural Selection in Action
5. Modern Synthesis
6. Mechanisms of Evolution
7. Biological Diversity Evolves
8. Macroevolution
9. Species and Speciation
10. Fossil Record
11. Taxonomy and Classification
12. Evolution of Microbial Life
13. Prokaryotes and Eukaryotes
14. Plants, Fungi, the Move onto Land
15. Plant Diversity/ Fungi
16. The Evolution of Animals
17. The Invertebrates/Vertebrates
18. Human Evolutions
19. Social Behavior
20. Ecology and the Biosphere
21. Biomes
22. Climate Change
23. Population Ecology
24. Population Growth Models
25. Human Population
26. Connections in the Natural World
27. Loss of Biodiversity
28. Community and Ecosystem Ecology
29. Conservation Strategies

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

1. demonstrate their understanding of the difference between evolution as fact and evolution as theory.
2. demonstrate their understanding of the patterns and processes of evolution.
3. identify the fundamental characteristics of viruses, bacteria, protists, fungi, plants, and animals.
4. identify the fundamental characteristics of select animal phyla.
5. demonstrate their understanding of fundamental principles of population, community, and ecosystem ecology.

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

### Goal 02 - Critical Thinking

1. Analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.

### Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.

### Goal 10 - People/Environment

1. Evaluate critically environmental and natural resource issues in light of understandings about interrelationships, ecosystems, and institutions.
2. Propose and assess alternative solutions to environmental problems.
3. Articulate and defend the actions they would take on various environmental issues.

### Goal 03 - Natural Science

1. 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.
2. 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.

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

None noted