

# Bemidji State University

## MATH 1120: Environmental Mathematics

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 0

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning, Goal 10 - People/Environment

This course will explore topics in which mathematics is used to investigate and inform decisions about environmental issues. Environmental issues addressed may include a study of population change, geoscience topics as related to economics and water resources, the average temperature of the earth, and data about the environment. Mathematical concepts may include iterative functions, unit conversion and statistics. Prerequisite(s): Successful completion of MATH 0800 with a grade of B or better, or three years of high school mathematics (including two years of algebra) and an appropriate score on the Mathematics Placement Test. Liberal Education Goal Areas 4 & 10.

**B. COURSE EFFECTIVE DATES:** 01/12/2015 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Mathematics
2. The Environment

### D. LEARNING OUTCOMES (General)

1. gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.
2. illustrate historical and contemporary applications of mathematics/logical systems.
3. clearly express mathematical/logical ideas in writing.
4. apply high-order problem-solving and/or modeling strategies.
5. explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems.
6. evaluate critically environmental and natural resource issues in light of understanding about interrelationships, ecosystems, and institutions.
7. propose and assess alternative solutions to environmental problems.
8. articulate and defend the actions they would take on various environmental issues.

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

### Goal 04 - Mathematical/Logical Reasoning

1. Illustrate historical and contemporary applications of mathematical/logical systems.
2. Clearly express mathematical/logical ideas in writing.
3. Apply higher-order problem-solving and/or modeling strategies.

### Goal 10 - People/Environment

1. Explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems.
2. Evaluate critically environmental and natural resource issues in light of understandings about interrelationships, ecosystems, and institutions.
3. Propose and assess alternative solutions to environmental problems.
4. 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