A. Course Description

Credits: 4

Prerequisites:

MATH 098 Introduction to Mathematical Thinking AND
WRIT 131 Writing I

OR

MATH 102 Mathematics of Sustainability AND
WRIT 131 Writing I

OR

MATH 110 Math for Liberal Arts AND
WRIT 131 Writing I

OR

MATH 115 College Algebra AND
WRIT 131 Writing I

Lab Hours/ Weeks: Corequisites: None

Lecture Hours/ Week :

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

An introduction to environmental science and the range of environmental issues that affect people on a global, local and personal level. Topics include sustainability, ecology, biodiversity, solid waste, water pollution, energy sources, air pollution, and climate change. Includes lab. The online version of this course requires students to purchase lab materials. Intended for general education students. Because college-level science courses contain extensive new terminology, many students find it helpful to take LING 111-Vocabulary Study prior to taking this course.

B. Course Effective Dates: 01/11/2010 - 05/04/2011 05/05/2011 - 05/03/2017 05/04/2017 - 05/07/2019 05/08/2019 - Present

C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Explain and apply knowledge of environmental chemistry, biology, geology and physics to natural conditions and human impacts on the Earth’s air, water, solid earth, and biological communities.
2. Understand and apply knowledge of measurement and use of lab equipment used in the environmental sciences, and use that knowledge in the proper conduct and interpretation of a scientific investigation.
3. Critically evaluate information about environment science, discern opposing views, and recognize biases in the presentation and interpretation of that information.
4. Evaluate critically environmental and natural resource issues in light of understandings about interrelationships, ecosystems, and institutions.
5. Evaluate environmental issues from a natural science perspective, asking questions about the evidence presented, and making informed judgments about science-related topics and policies.
6. Explain how various natural ecosystems are used by humans, how humans are dependent on them, and how human activities alter them.
7. Formulate and test hypotheses by performing a field experiment in environmental science, including the collection of data, statistical and graphical analysis of results, and an interpretation of its sources of error and uncertainty; Communicate their experiential findings, analyses, and interpretations both orally and in writing.
8. Demonstrate understanding of scientific theories and knowledge in environmental science at the level necessary for
informed citizenship.
9. Evaluate critically environmental and natural resource issues in light of understandings about interrelationships, ecosystems, and institutions.

E. Learning Outcomes (MN Transfer Curriculum)

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. Demonstrate understanding of scientific theories.
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. Propose and assess alternative solutions to environmental problems.
2. Describe the basic institutional arrangements (social, legal, political, economic, religious) that are evolving to deal with environmental and natural resource challenges.
3. Evaluate critically environmental and natural resource issues in light of understandings about interrelationships, ecosystems, and institutions.

G. Special Information

Overlap: Student cannot receive credit for both NATH 204 Environmental Science and NSCI 204 Environmental Science. Note: First day attendance required except by instructor permission.