A. Course Description

Credits: 4

Prerequisites: MATH 098 Introduction to Mathematical Thinking or MATH 102 Mathematics of Sustainability or placement at or above College Algebra level on the University's assessment test.

Lab Hours/ Weeks: Corequisites: None

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

An introduction to the science of plant biology and the roles that plants have played in the development of human civilization. Topics covered include foods, medicines, fibers, dyes, drugs, the origins of agriculture and potentially exploitable plants for the future. Includes lab. Intended for general education students.

B. Course Effective Dates: 01/11/2010 - 05/04/2011 05/05/2011 - Present

C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Demonstrate quantitative reasoning skills and competency with the use of arithmetic and statistics at a level appropriate for graduates of bachelors degree programs.
2. Demonstrate understanding of scientific theories and knowledge in plant biology, agriculture and horticulture at the level necessary for informed citizenship.
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. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.
6. Formulate and test hypotheses by performing an experiment in plant biology, 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.
7. Know and be able to describe the history of the use of plants as the source of products useful to humans including food, medicine, toxins, and fibers.
8. Propose and assess alternative solutions to environmental problems; Articulate and defend the actions they would take on various environmental issues.
9. Understand and apply knowledge of measurement and use of lab equipment used in the applied plant sciences, and use that knowledge in the proper conduct and interpretation of a scientific investigation.
10. Understand and explain the significance of plants to human life, how plants and plant science have affected and continue to affect the development of human civilization including cultural, political, economic and religious systems, and the consequences for plants of the range of human interactions with the environment from deforestation to mono-culture cropping.

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

Note: First day attendance required except by instructor permission. Overlap: Student cannot receive credit for both NATH 203 Plants and Human Affairs and NSCI 203 Plants and Human Affairs.