

Minnesota State University Moorhead

BIOL 328: Lake Superior Ecology

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 10 - People/Environment

This three credit summer travel course along the north shore of Lake Superior allows students to relate events of the creation and succession of natural resources; human use and exploitation of these resources; and attempts to preserve them. Lectures include the ecology of the boreal forest and effects of logging; fish diversity and the rise and fall of the fisheries industry, including the calamity of sea lamprey invasion (and other exotic species); and the rise and fall of the iron ore industry and its effect on the environment. Students will study the predator/prey interaction of the moose-wolf population of Isle Royale. The travel portion of the course includes tent camping in state parks to study the driving forces behind park development, including the history of people involved in conservation. As we travel north and across the US/Canadian border, we will visit industries including fisheries, forestry, iron ore mines, taconite mines, amethyst mines and tourism industry, observing their effects on both the environment and people. The concept of local and global sustainability will be a pervasive theme throughout the course. MnTC Goal 10.

B. COURSE EFFECTIVE DATES: 03/03/2014 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. Appreciate the complexity of the balance between human activity and habitat conservation.
2. Become familiar with ecological processes in the context of the land formation of the north shore of Lake Superior (e.g. primary/secondary succession).
3. Become familiar with the development of the state parks on the north shore in protecting natural habitats.
4. Become familiar with the history of community settlement and their reliance on industries for economical survival.
5. Compare and contrast industrial uses between the north shore of United States and Canada.
6. Compare and contrast natural parks history and policies between the north shore of United States and Canada.
7. Gain appreciation to the hardships of living on the north shore, including the lack of good farm land, the depletion of natural resources, and the increasing reliance on tourism.
8. Understand the geological history of the Precambrian shield and Lake Superior and its unique land formation.

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

Goal 10 - People/Environment

1. Explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems.
2. Discern patterns and interrelationships of bio-physical and socio-cultural systems.
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. Propose and assess alternative solutions to environmental problems.
6. 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