Minnesota State University Moorhead

BIOL 370: Exploring Biology

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 10 - People/Environment

This course includes principles of biology with an emphasis on human biology, basic concepts in ecology, and the impact of specific environmental problems. The course includes two lab hours integrated into the bi-weekly meeting times. MnTC Goal 10.

B. COURSE EFFECTIVE DATES: 05/15/2011 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Ecology and Ecosystems: How is it that no organism can survive on its own and all life is interdependent? How do organisms also interact with their environments in order to survive? What causes population crashes and explosions? How does energy flow and matter cycle through ecosystems?
2. Genetics and Evolution: How have organisms evolved to adapt to their environments? What are the mechanisms of evolution at the cellular, individual, and population levels? How do organisms adapt to changes to their environments? What factors contribute to endangered and extinct species?
3. Organisms and their Environments: What types of organisms exist on our planet? What kinds of different adaptations keep various types of organisms alive? Are humans any different than other organisms in the way they interact with and are sustained by their environments? What does sustainability really mean for any species, including humans? What makes humans the ¿dominant animal¿ at this point in the earth¿s history, and will it stay that way?

D. LEARNING OUTCOMES (General)

1. Understand science as a human endeavor, the nature of scientific knowledge, and the historical perspective of science entific argument.
2. Know and apply the understandings and abilities of scientific inquiry including the ability to: identify questions and concepts that can be explored through scientific inquiry; design and conduct scientific investigations; use appropriate scientific instrumentation and equipment and mathematics as tools to improve scientific investigations and communications; compare the use of multiple types of inquiry for answering questions; evaluate alternative explanations and models based on evidence, current scientific understanding, and logic; and communicate and defend a scientific argument.
3. Use scientific understandings and abilities when making decisions about personal and societal issues.
4. Know and apply the fundamental concepts and principles of life science concerning the characteristics of organisms, the life cycle of organisms, the interrelationships of organisms and environments, structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems and their interrelationships, and diversity and adaptations of organisms.
5. Know and apply the fundamental concepts and principles of ecology and the natural environment, and be able to address these concepts in regards to human sustainability.

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