

Alexandria Technical and Community College

BIOL 1411: Introduction to Biology II

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

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

This course provides the learner with a broad introduction to principles and theories in biology. It includes an investigation into the biodiversity, classification of species, and ecology of life. This course addresses the fundamentals of conservation, including the impacts of humans on the environment. Lab experience is included.

B. COURSE EFFECTIVE DATES: 05/22/2006 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Explain the process and mechanism of evolution.
2. Investigate the phylogeny of species.
3. Describe the characteristics of the prokaryotic domains and their major phyla.
4. Describe the characteristics, phylogeny, and diversity of eukaryotic organisms.
5. Examine the interconnectedness of the Earth's biosphere, ecosystems, and climate.
6. Apply the principles of population and community ecology to evaluate the threats to biodiversity and justify potential solutions.
7. Formulate hypotheses and investigate a research question using the scientific method.
8. Design graphs and tables to visualize scientific data.

D. LEARNING OUTCOMES (General)

1. The learner will demonstrate knowledge of the core concepts of ecology.
2. The learner will demonstrate knowledge of the diversity and classification of life.
3. The learner will demonstrate knowledge of speciation and evolution.
4. The learner will demonstrate ability to conduct scientific investigation in biology.

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

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. 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.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. 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. Explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems.
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.
4. Propose and assess alternative solutions to environmental problems.
5. 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