

Anoka-Ramsey Community College

BIOL 1107: Principles of Biology II

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 3

OJT Hours/Week: *.*

Prerequisites:

This course requires both of these prerequisite categories

1. One of these two

BIOL 1106 - Principles of Biology I (Minimum grade: 2.0 GPA Equivalent)

A score of 3 on test Advanced Placement Biology

And

2. One of these two

CHEM 1020 - Interpretive Chemistry (Minimum grade: 2.0 GPA Equivalent)

CHEM 1061 - Principles of Chemistry I (Minimum grade: 2.0 GPA Equivalent)

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

(MnTC Goal 3)

Prerequisites: BIOL 1106 and CHEM 1020 or BIOL 1106 and CHEM 1061 with a grade of C or better

Recommended Skills, Abilities, or Coursework: College-level Mathematics, Reading and Writing

Continuation of the introduction to the science of biology. This course includes topics in the molecular basis of inheritance, evolutionary origins of life's diversity, the diversity of protista, fungi, plants, animals, and basic concepts in ecology.

B. COURSE EFFECTIVE DATES: 06/01/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Demonstrate an understanding of the genome, including:
 - a. microbial models
 - b. the eukaryotic genome
 - c. DNA technology
2. Describe the nature of evolution, including:
 - a. the evolution of populations
 - b. origin of species
 - c. evolutionary history of biological diversity
3. Describe the origins of metabolic diversity, including:
 - a. prokaryotic organization
 - b. eukaryotic organization
4. Describe the distinguishing features among the major forms of life, including:
 - a. protists
 - b. fungi
 - c. plants
 - d. invertebrate and vertebrate animals
5. Demonstrate an understanding of basic ecological concepts, including:
 - a. the influence of abiotic factors on organism distribution
 - b. population growth dynamics
 - c. community interactions
 - d. energy flow in ecosystems
 - e. material cycles in ecosystems
 - f. ecological succession with experimental analysis and reporting
 - g. behavioral ecology with experimental analysis and reporting
6. Demonstrate an understanding of science as a process, including:
 - a. use of tools of biological investigation
 - b. distinguish between deductive and inductive reasoning
 - c. application of experimental design
 - d. analyzing and reporting experimental findings

D. LEARNING OUTCOMES (General)

1. Understand and apply knowledge of plant biology, animal biology, evolution and diversity, and ecology
2. Recall, explain, and apply concepts, knowledge and vocabulary of biology at the level necessary for success in subsequent biology courses for science majors
3. Demonstrate understanding of scientific theories in biology
4. Demonstrate quantitative reasoning skills at a level appropriate for subsequent courses in biology for science majors
5. Distinguish between and demonstrate appropriate use of primary and secondary scientific literature
6. Formulate and test hypotheses by performing laboratory experiments in biology that include the collection of data, statistical analysis, graphical presentation of results, and interpretation of sources of error and uncertainty
7. Communicate experimental findings both orally and in writing
8. Understand and apply knowledge of use of the microscope and other biological laboratory equipment, and apply that knowledge in the proper conduct and interpretation of laboratory investigations

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.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted