

Anoka-Ramsey Community College

BIOL 2202: Genetics

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 3

OJT Hours/Week: *.*

Prerequisites:

This course requires either of these prerequisites

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

A score of 3 on test Advanced Placement Biology

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

(MnTC Goal 3)

Prerequisites: Biology 1106 with a grade of C or better

Recommended Skills, Abilities, or Coursework: BIOL 1107 strongly recommended

Study of the storage, transfer, and expression of hereditary information. Topics covered include transmission, molecular, and population genetics.

B. COURSE EFFECTIVE DATES: 08/25/2008 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. DNA Structure and Function
2. Cell Cycle, Mitosis, and Meiosis
3. Mendelian Principles and Analysis of Inheritance
4. Multi-Gene Expression
5. Non-Mendelian Inheritance
6. Gene Mapping
7. Chromosomal Abnormalities
8. Genome Organization in viruses, prokaryotes, and eukaryotes
9. DNA Replication
10. Transcription
11. Translation
12. Mutations
13. Transposition
14. Epigenetics

D. LEARNING OUTCOMES (General)

1. Explain and apply fundamental concepts related to the storage, transfer, and expression of genetic information at the cellular, organismal, and population level
2. Use critical thinking skills to understand, evaluate, and analyze processes of inheritance
3. Demonstrate ability to apply relevant statistical tests to genetic data
4. Formulate a hypothesis, and conduct and analyze an experiment with a model organism
5. Organize, draft, edit, and revise formal scientific writing
6. Read, interpret, incorporate, and cite information and ideas from primary literature into writing and orally
7. Utilize and understand the application of a genetic technology

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