

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. BIOL

COURSE NUMBER: 1110

NUMBER OF CREDITS: 4

Lecture: 3 Lab: 1 OJT: 0

Course Title:
Principles of Biology I

Catalog Description:
Principles of Biology I investigates fundamental principles of biology with special emphasis on the composition of living things and living systems, the chemistry of living things, natural selection, cell biology, metabolism emphasizing bioenergetics and biosynthesis, the cell cycle, and genetics. This course includes a lab.

Prerequisites or Necessary Entry Skills/Knowledge:
Prerequisite: STSK 0090 or placement by multiple measures.

FULFILLS MN TRANSFER CURRICULUM AREA(S) :

Goal 3: Natural Sciences: X by meeting the following competencies:

- Demonstrate understanding of scientific theories.
- 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.
- Communicate their experimental findings, analyses, and interpretations both orally and in writing.
- Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

Topics to be Covered
Characteristics of Life
Chemistry of living things
Cell structure and function
Biological Membranes
Tissues form and function
Energy and Metabolism
Cellular respiration
DNA replication

Transcription and translation
Mitosis/meiosis
Patterns of inheritance
Mendelian genetics
Human Genetics/Genome
Evolution
Taxonomy

Student Learning Outcomes	
Identify organic molecules and their function.	
Describe and illustrate different types of cells, list the organelles, and summarize their functions.	
Identify the different types of tissues and describe their functions.	
Illustrate and explain cellular respiration.	
Summarize the processes of DNA replication, transcription and translation.	
Compare and contrast the phases of mitosis and meiosis and outline the details of each phase.	
Demonstrate various patterns of inheritance and apply that knowledge to the human genome.	
Examine the theory of evolution.	
Classify organisms by utilizing binomial nomenclature.	

Is this course part of a transfer pathway: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Revised Date: 6/2021