

# MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

## COURSE OUTLINE

**DEPT. BIOL**

**COURSE NUMBER: 1110**

**NUMBER OF CREDITS: 4**

**Lecture: 3 Lab: 1 OJT: 0**

<b>Course Title:</b>
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Principles of Biology I
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<b>Catalog Description:</b>
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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. The course includes a lab.
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<b>Prerequisites or Necessary Entry Skills/Knowledge:</b>
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STSK 0090 or placement by multiple measures.
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### FULFILLS MN TRANSFER CURRICULUM AREA(S)

☒ Goal 3: Natural Sciences: By meeting the following competencies:

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.

<b>Topics to be Covered (General)</b>
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Characteristics of Life
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Chemistry of living things
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Cell structure and function
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Biological Membranes
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Tissues form and function
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Energy and Metabolism
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Cellular respiration
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Photosynthesis
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DNA replication
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Transcription and translation
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Mitosis/meiosis
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Patterns of inheritance
Mendelian genetics
Human Genetics/Genome
Evolution
Taxonomy

Student Learning Outcomes
Formulate and test hypotheses by performing experiments including collecting & analyzing data, identifying sources of error, and communicating results.
Identify organic molecules and their function.
Describe and illustrate different types of cells, list the organelles, and summarize their functions.
Diagram and explain cellular respiration and photosynthesis.
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.

<b>Is this course part of a transfer pathway:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<small>*If yes, please list the competencies below</small>

Revised Date: 2/16/2024