# Minnesota State University Moorhead

# BIOL 109: Biology Today

## A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

This course offers an issues-oriented approach to the learning of biology. This course is designed to encourage critical evaluation of biological information providing students with a biological literacy that will enable them to make appropriate decisions affecting their own lives and the well-being of society. Course should be taken concurrently with BIOL 109. For non-science majors; majors or minors in Biology should take BIOL 111. MnTC Goal 3.

## B. COURSE EFFECTIVE DATES: 01/12/2009 - Present

## C. OUTLINE OF MAJOR CONTENT AREAS

1. Biology and Ethics
2. Classifying Nature
3. DNA and Human Genetics
4. Evolution and Human Variation
5. Human Reproduction
6. Ecology, Environment Issues, Sustainability
7. Genetically Modified Foods
8. Stem Cell Biology and Ethics
9. Neurobiology-Drugs and Addiction
10. Immunology

## D. LEARNING OUTCOMES (General)

1. Demonstrate an understanding of the scientific method and of the relationship between hypotheses and theories.
2. Recognize and define problems and formulate and test hypotheses using data collected by observation or experiment. One project must develop, in greater depth, students¿ laboratory or field experience in the collection of data, its quantitative and graphical analysis, its interpretation, its reporting, and an appreciation of its sources of error and uncertainty.
3. Exhibit knowledge of the development and contributions of major scientific theories.
4. Demonstrate knowledge of the concepts, principles, problems, and perspectives of one or more specific scientific disciplines.
5. Consider societal issues from natural science perspectives, making informed judgments by assessing and evaluating scientific information.
6. An issues-oriented approach to the learning of biology, one that emphasizes coherent understanding on selected issues.
7. Thorough coverage of biological concepts, ensuring that introductory biology students are able to grasp the science while debating the issues.
8. Coverage of immediate contemporary issues, making certain that biological concepts will connect with students' daily lives.
9. An integrated educational system that encourages critical thinking and questioning rather than just memorization. One of the aims of this course is to educate students with a biological literacy that will enable them to evaluate scientific arguments and make appropriate decisions affecting their own lives and the well-being of society.
10. Educational features, such as "Thought Questions", that encourage students to think about biology as a process of inquiry rather than as a series of unquestioned facts.
11. An approach that helps students to understand the connections among fields of biology and the intimate connections between biology and social issues.

## 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