

HIBBING COMMUNITY COLLEGE COURSE OUTLINE

COURSE NUMBER & TITLE: BIOL 1001: Introduction to Biology

CREDITS: 1 (Lecture 1 / Lab 0)

PREREQUISITES: None

CATALOG DESCRIPTION:

Introduction to Biology is an introduction to the basic characteristics, processes, and techniques common to the study of biological sciences. Major topics include: basic cell biology, the chemistry of life, genetics, human organ systems, and an introduction to laboratory techniques and research. This class is intended for anyone interested in future courses or currently taking a college biology course and students who are part of a health careers learning community.

OUTLINE OF MAJOR CONTENT AREAS:

- I. Introduction to the science of biology
 - A. Science and the scientific method
 - B. Characteristics of life
 - C. Future directions in biology
- II. Chemistry of life
 - A. Organic molecules
 - B. Enzymes and reactions
 - C. Energy and adenosine tri-phosphate (ATP)
 - D. Deoxyribonucleic acid (DNA)
- III. Cells
 - A. Diversity of structure and function
 - B. Chemical and electrical signaling
 - C. Microorganisms and disease
- IV. Genetics
 - A. Chromosomes and cell division
 - B. Inheritance of traits
- V. Physiology
 - A. Circulation and Exchange
 - B. Nutrition
 - C. Control systems
- VI. Biotechnology and laboratory practice
 - A. Research techniques
 - B. Equipment and lab safety

COURSE GOALS/OBJECTIVES/OUTCOMES:

Students will

1. define biology and list several ways in which biology is relevant to his/her life.
2. differentiate among science, non-science, and pseudoscience and provide examples of each.

3. explain what is meant by the scientific method and describe the basic steps commonly used by scientists.
4. list the major characteristics of living organisms.
5. list and describe several major trends in biology which dramatically affect humans.
6. relate the science of chemistry to the study of biological systems.
7. list the major organic molecules, give examples of organic molecules, and provide an explanation of the importance of organic molecules to living organisms.
8. diagram the lock and key hypothesis of enzyme action, explain the importance of enzymes in living organisms, and list several examples of enzymes.
9. describe how living organisms obtain, process, and transform energy.
10. explain how research and technology impact human life.
11. identify how genetic differences come about.
12. describe how energy is used and converted within living systems.
13. describe the interactions between cells and their immediate environment.
14. describe the systems responsible for control and regulation of physiological processes.

MNTC GOALS AND COMPETENCIES MET:

N/A

HCC COMPETENCIES MET:

Working Productively and Cooperatively

Communicating Clearly and Effectively

Thinking Creatively and Critically

STUDENT CONTRIBUTIONS: (SPECIAL FEES, DIRECTIVE ON HAZARDOUS MATERIALS, ETC.)

Students are expected to attend all class sessions, participate in and contribute to class discussions, complete all assignments on time, and request assistance when needed. Attendance is critical for the successful completion of this course. Students must abide by all rules of laboratory safety, act in a responsible manner, and treat others with respect.

STUDENT ASSESSMENT SHALL TAKE PLACE USING INSTRUMENTS SELECTED/DEVELOPED BY THE COURSE INSTRUCTOR.

SPECIAL INFORMATION:

This course may involve exposure to harmful chemicals. Students will be supplied with pertinent information relating to this at the appropriate time.

AASC APPROVAL DATE: May 13, 2014
REVIEW DATE: May 2019

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