HIBBING COMMUNITY COLLEGE
COURSE OUTLINE

COURSE NUMBER & TITLE: BIOL 1050 - Human Biology
CREDITS: 3 (Lecture 2 / Lab 1)
PREREQUISITES: None

CATALOG DESCRIPTION:
Human Biology is a course in modern biology intended for non-majors. Major topics include genetics and inherited traits, ecology and evolution, human physiology and development, adaptation, and interactions involved in natural systems. Human Biology is centered on relevant concepts affecting humans.

OUTLINE OF MAJOR CONTENT AREAS:
1. Introduction to human biology
   A. Science and the scientific method
   B. Characteristics of life
   C. Future directions in biology
2. Chemistry of life
   A. Organic molecules
   B. Enzymes
   C. Energy and adenosine triphosphate (ATP)
   D. Deoxyribonucleic acid (DNA) and ribonucleic acid (RNA)
3. Human genetics
   A. Mitosis and meiosis
   B. Mendelian genetics
   C. Diversity within species
4. Natural selection and evolution
   A. Speciation
   B. Evolutionary change
5. Ecosystem organization and energy flow
   A. Ecology and the environment
   B. Ecological communities
   C. Ecosystems
   D. Community interactions
6. Human physiology and adaptation
   A. Circulation
   B. Gas exchange
   C. Obtaining nutrients
   D. Waste disposal
   E. Nutrition
F. Control systems
G. Reproduction and human sexuality
7. Origin and classification of life
   A. Theories on the origin of life
   B. Classification of organisms

COURSE GOALS/OBJECTIVES/OUTCOMES:
1. Students will explain what is meant by the scientific method and describe the
   basic steps commonly used by scientists, while being able to recognize non-
   science and pseudoscience.
2. Students will list and describe several major trends in biology which dramatically
   affect humans.
3. Students will list the major organic molecules, provide examples of each, and
   explain their importance to living organisms.
4. Students will describe how living organisms obtain, process, and transform
   energy.
5. Students will diagram the structure of DNA and RNA, and explain the processes
   of replication, transcription, and translation.
6. Students will identify the stages of mitosis and meiosis and explain the
   significance of cell division to living organisms.
7. Students will outline how inherited human characteristics are passed from
   generation to generation.
8. Students will explain the role of natural selection in evolution.
9. Students will map the interactions that occur within ecosystems and how
   organisms within communities affect each other in the cycling of matter.
10. Students will describe the systems responsible for control and regulation of
    physiological processes in the human body.

MNTC GOALS AND COMPETENCIES MET:
Natural Science
People and the Environment

HCC COMPETENCIES MET:
Working Productively and Cooperatively
Communicating Clearly and Effectively
Thinking Creatively and Critically
Practicing Cultural, Economic, and Environmental Sustainability
STUDENT CONTRIBUTIONS:
Students are expected to attend all lecture and laboratory 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.

METHODS FOR EVALUATING STUDENT LEARNING:
Student evaluation will be on the basis of cumulative points gained during the course. The evaluative methods are written examinations, quizzes, writing exercises, journal article analysis, laboratory notebooks and exams, case study exercises, class participation, and data collection and evaluation.

ADDITIONAL INFORMATION:
The laboratory portion of this course may involve moderate physical activities, exposure to harmful chemicals, and field work under extreme weather conditions. Students will be supplied with pertinent information relating to the above at the appropriate time.

Curriculum Committee Approval Date: February 5, 2018

AASC APPROVAL DATE: February 21, 2018
REVIEW DATE: February 2023