ROCHESTER COMMUNITY AND TECHNICAL COLLEGE

COMMON COURSE OUTLINE

Course discipline/number/title: BIOL 1110: Human Biology

A. CATALOG DESCRIPTION

1. **Credits: 4**
2. **Hours/Week: 3 lecture, 2 lab**
3. **Prerequisites (Course discipline/number):** None
4. **Other requirements:** None
5. **MnTC Goals (if any):** Goal 3/Natural Sciences

B. COURSE DESCRIPTION: This course is a one semester study of the biology of the human body. Each of the component systems will be studied in order to develop an understanding of how each part contributes to the whole. This knowledge will be applied to the analysis of current health and social issues. Laboratory sessions are designed to correlate with lecture topics. Dissection of appropriate animal specimens is included.

C. DATE LAST REVISED (Month, year): May, 2023

D. OUTLINE OF MAJOR CONTENT AREAS:

1. Introduction
   a) Body organization-cavities and organ systems
   b) Basic Chemistry and Chemistry of Life

2. The Cell
   a) Structure and Function
   b) Cell Cycle and Mitosis
   c) Cell Metabolism
   d) Cell Theory

3. Principles of inheritance
   a) Meiosis
   b) Mendel's laws
   c) Chromosome structure and function
   d) Pedigree analysis
   e) Evolution

4. Tissues

5. Integrative systems
   a) Nervous system
   b) The senses
   c) Endocrine system

6. Support, transport, and defense systems
   a) Musculoskeletal system
   b) Circulatory system
   c) Blood
   d) Immune system

7. Intake and waste removal systems
   a) Respiratory system
   b) Digestive system and Nutrition
   c) Urinary system

8. Reproduction
   a) Reproductive system
   b) Development and aging

E. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Define and use the vocabulary of biology as it applies to humans.
2. Describe the basic principles of cell structure, function, growth, and reproduction.
3. Describe the principles of body organization, functions of the organ systems, and the human reproduction and inheritance.
4. Relate knowledge of human biology to issues of lifestyle choices, public health, and relationship to the environment.
5. Conduct scientific investigations, evaluate results, and draw logical conclusions.

F. LEARNING OUTCOMES (MNTC):

Goal 3/Natural Sciences: The student will be able to:

1. 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, student's laboratory experience in the collection of data, it's statistical and graphical analysis, and an approbation of its source of error and uncertainty.
2. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
3. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:

1. Lecture exams
2. Brief writing assignments, either as homework or as in-class exercises
3. Lab exercises, simulations, lab reports and/or quizzes, and lab exams
4. Homework assignments.

H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s):
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

I. SPECIAL INFORMATION (if any):

The initial lab session explains and familiarizes the student with general safety hazards and safety equipment in the lab. During the pre-lab discussion, the hazardous characteristics of any materials used during the lab are discussed. In addition, if the lab involves any potentially infectious material, the students will be instructed on the proper use and disposal. The instructor will direct all students to wear necessary protective equipment while working with any hazardous materials. A copy of Safety Data Sheets for chemicals used are available online.