COMMON COURSE OUTLINE: Course discipline/number/title: BIOL 1110: Human Biology

A. CATALOG DESCRIPTION
1. Credits: 4
2. Hours/Week: 3 hours lecture and 2 hours lab per week
3. Prerequisites (Course discipline/number): High School Biology (1 year) or BIOL 1101
4. Co-requisites (Course discipline/number): None

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. RECOMMENDED ENTRY SKILLS/KNOWLEDGE: 12th grade reading and writing skills.

B. DATE LAST REVISED (Month, year): May, 1997

C. OUTLINE OF MAJOR CONTENT AREAS:
1. Cell biology
   a) Chemistry, molecules of life
   b) Cell structure, function
   c) Cell cycle and mitosis
   d) Cell metabolism

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

3. Body organization
   a) Cells and tissues
   b) Body cavities
   c) Organ systems

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

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

6. Nutrient intake and waste removal systems
   a) Respiratory system
   b) Nutrition and digestion
   c) Urinary system

7. Reproduction
   a) Reproductive system
   b) Development, aging
C. OUTLINE OF MAJOR CONTENT AREAS: Continued...
Laboratory exercises include the following topics:
1. Use of the microscope
2. Cell structure
3. Principles of diffusion and osmosis
4. Information transfer in cells - DNA, RNA, and protein
5. Analysis of tissues
6. Human musculoskeletal system
7. Cardiovascular system - the heart
8. Circulatory system - fetal pig dissection
9. Digestive system - fetal pig dissection
10. Nervous system - reflexes, sensory perception
11. Measurement of vital functions
12. Urinary and reproductive systems - fetal pig dissection

D. LEARNING OUTCOMES (GENERAL): The student will be able to:
1. Learn the vocabulary of biology as it applies to humans.
2. Understand the basic principles of cell structure, function, growth, and reproduction.
3. Understand the principles of body organization, function of the organ systems, and human reproduction and inheritance.
4. Relate knowledge of human biology to issues of lifestyle choices, public health, and relationship to the environment.

E. LEARNING OUTCOMES (MNTC):
Goal 2/Critical Thinking: The student will be able to:
1. Gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.
2. Analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.
3. Recognize and articulate the value assumptions which underlie and affect decisions, interpretations, analyses, and evaluations made by ourselves and others.

Goal 3/Natural Sciences: The student will be able to:
1. Formulate and test hypotheses by performing laboratory or simulation experiments requiring the collection of data and its graphical analysis; gain an appreciation of uncertainty and sources of error in data collection and analysis.
2. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
3. Evaluate societal issues from a biological perspective, asking questions about the evidence presented and making informed judgments about biology-related topics and policies.

F. METHODS FOR EVALUATION OF STUDENT LEARNING:
1. A lecture exam for each of the major units covered.
2. Brief writing assignments, either as homework or as in-class exercises.
3. Lab exercises and exams
4. Oral presentations

G. 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 Material Safety Data Sheets for chemicals used is available in the lab.