

# EASTERN ARIZONA COLLEGE

## Human Body in Health and Disease

Course Design  
2018-2019

**Course Information**

**Division** Allied Health  
**Course Number** HCE 190  
**Title** Human Body in Health and Disease  
**Credits** 4  
**Developed by** John Clegg  
**Lecture/Lab Ratio** 4 Lecture/0 Lab

ASU	NAU	UA
BIO Dept Elective	Elective Credit	Non Transferable

**Activity Course** No  
**CIP Code** 51.0800  
**Assessment Mode** Pre/Post Test (75 Questions/75 Points)  
**Semester Taught** Fall and Spring  
**GE Category** None  
**Separate Lab** No  
**Awareness Course** No  
**Intensive Writing Course** No  
**Diversity and Inclusion Course** No

**Prerequisites**

None

**Educational Value**

This course is valuable to all Allied Health programs.

**Description**

This course encompasses the study of the basic concepts of human biology which includes anatomy, physiology, biochemistry, cytology, histology, pathology and related pharmacology. Included are the essential anatomical and physiological concepts of the human body's organ systems. Also included are discussions of growth, development, and aging of the human body. Understanding of these subjects leads to the topic of the psychological development of one's personality and inter-social relationships. This is based on the concept of the human's "hierarchy of needs" which is part of this course. Lab activities may be incorporated into the lectures. They will be designed to support or teach concept.

**Supplies**

None

## **Competencies and Performance Standards**

### **1. Identify the structure and function of the body.**

#### **Learning objectives**

*What you will learn as you master the competency:*

- a. List and discuss in order of increasing complexity the levels of organization of the body.
- b. Define the principal directional terms and sections (planes) used in describing the body and the relationship of body parts to one another.
- c. List the major cavities of the body and the sub-divisions found in each.
- d. Compare and contrast the axial and the appendicular subdivisions of the body including identifying a number of specific anatomical regions in each area.
- e. Explain the meaning of the term homeostasis and give an example of a typical homeostatic mechanism.

#### **Performance Standards**

*Competence will be demonstrated:*

- o in completion of course assignments and tests

*Criteria - Performance will be satisfactory when:*

- o learner participates in class activities

### **2. Describe the chemistry of life.**

#### **Learning objectives**

*What you will learn as you master the competency:*

- a. Define the terms and structure of an atom, element, molecule, and compound.
- b. Compare and contrast ionic and covalent types of chemical bonding.
- c. Distinguish between organic and inorganic compounds.
- d. Describe the chemical characteristics of water.
- e. Explain the concept of pH.
- f. Describe the structure and function of the following types of organic molecules: carbohydrate, lipid, protein, and nucleic acid.

#### **Performance Standards**

*Competence will be demonstrated:*

- o in completion of course assignments and tests

*Criteria - Performance will be satisfactory when:*

- o learner participates in class activities

### **3. Identify cells and tissues.**

#### **Learning objectives**

*What you will learn as you master the competency:*

- a. Describe the basic structure and function of the three major components of a cell.
- b. Identify functions of the primary cellular organelles.
- c. Compare the major passive and active transport processes that act to move substances through cell membranes.
- d. Compare and discuss deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) and their function in protein synthesis.

- e. Describe the stages of mitosis and explain the importance of cellular reproduction.
- f. Explain how epithelial tissue can be grouped according to shape and arrangement of cells.
- g. List the major types of connective and muscle tissue.
- h. List the three structural components of a neuron.

**Performance Standards**

*Competence will be demonstrated:*

- o in completion of course assignments and tests

*Criteria - Performance will be satisfactory when:*

- o learner participates in class activities

**4. Describe organ systems of the body.**

**Learning objectives**

*What you will learn as you master the competency:*

- a. List the 11 major organ systems of the body.
- b. Identify and locate the major organs of each major organ system.
- c. Describe the major functions of each major organ system.
- d. Describe current approaches to organ replacement.

**Performance Standards**

*Competence will be demonstrated:*

- o in completion of course assignments and tests

*Criteria - Performance will be satisfactory when:*

- o learner participates in class activities

**5. Describe mechanisms of disease.**

**Learning objectives**

*What you will learn as you master the competency:*

- a. Define the terms health and disease.
- b. List and describe the basic mechanisms of disease and risk factors associated with disease.
- c. Describe five categories of pathogenic organisms and explain how they cause disease.
- d. Describe the pathogenesis of cancer.
- e. Outline the events of the inflammatory response and explain its role in disease.

**Performance Standards**

*Competence will be demonstrated:*

- o in completion of course assignments and tests

*Criteria - Performance will be satisfactory when:*

- o learner participates in class activities

## 6. Recognize pathophysiology of the body system and related pharmacology.

### **Learning objectives**

*What you will learn as you master the competency:*

- a. Identify the major structures of the skin and how they relate to disease processes.
- b. Identify the major bones and joints that make up the human skeleton and understand bone and joint physiology and how it related to disease processes.
- c. Identify the major muscles of the human body and basic muscle cell physiology.
- d. Describe the different nervous systems and their interrelationships and the physiology of nerve conduction.
- e. Describe the lymphatic and immune system.
- f. Identify the major elements of the cardiovascular system including heart, blood vessels, blood and circulation.
- g. Know how the respiratory system functions and what anatomical structures are involved. Also appreciate chronic lung pathology.
- h. Describe the complexities of the digestive system especially with regards to metabolism and nutrition.
- i. Identify the major structures of the urinary system and the physiology of urine formation.
- j. Describe basic genetics and reproductive physiology including basic aspects of human development and the pathology of sexually transmitted diseases (STD's).

### **Performance Standards**

*Competence will be demonstrated:*

- o in completion of course assignments and tests

*Criteria - Performance will be satisfactory when:*

- o learner participates in class activities

### **Types of Instruction**

Classroom Presentation with possible WebStudy supplementation, or online only on WebStudy.

### **Grading Information**

#### **Grading Rationale**

A pretest will be administered at the beginning of the course, which will not count as part of the final grade. The final written exam (posttest) will count as 25% of the final grade. All other written exams will count as 50% and assignments will count as 25% of the final grade.

#### **Grading Scale**

- |   |         |
|---|---------|
| A | 90-100% |
| B | 80-89%  |
| C | 70-79%  |
| D | 60-69%  |
| F | 0-59%   |