

# Lassen Community College Course Outline

## HO-54 Basic Structure and Function of the Human Body 2.0 Units

### I. Catalog Description

Basic course focusing on the structure and function of the human body. This course is approved for online and hybrid delivery.

***Diversity Statement:** Our commitment to diversity requires that we strive to eliminate barriers to equity and that we act deliberately to create a safe and inclusive environment where individual and group differences are valued and leveraged for the growth and understanding as an educational community.*

**Recommended Preparation:**-None

Does not transfer to UC/CSU

34 Hours Lecture, 68 Expected Outside Class Hours, 102 Total Student Learning Hours.  
Scheduled: Fall, Spring

### II. Coding Information

Repeatability: Not Repeatable, Take 1 Time

Grading Option: Graded or Pass/No Pass

Credit Type: Credit - Degree Applicable

TOP Code: 120100

### III. Course Objectives

#### A. Course Student Learning Outcomes

Upon completion of this course the student will be able to:

1. Locate basic structures of anatomy in the human body.
2. Identify basic functions for human body structures and systems.

#### B. Course Objectives

Upon completion of this course the student will be able to:

1. List the major body systems, processes, planes and cavities.
2. Define basic chemical terms associated with cellular activity.
3. Describe the structure and function of the cell.
4. Discuss cell division.
5. Identify the passive and active transport mechanisms that act to move substances through cell membranes.
6. List and describe different types of body tissue.
7. Identify and locate the major organs of each body system.
8. Describe the function of each body organ.
9. Describe the structure and function of the integumentary system.
10. List and describe the accessory organs of the skin.
11. Discuss bone formation and growth.
12. Describe the structure and function of the skeletal system.
13. List and compare the different types of joints found in the body.
14. List and describe different types of muscle tissue.
15. Describe the process of muscle contraction.
16. Describe the structure and function of the muscular system.

17. Differentiate between the central nervous system, peripheral nervous system and the autonomic nervous system.
18. Discuss the structure and function of the eye.
19. Discuss the structure and function of the ear.
20. Discuss the structure and function of the sense organs.
21. Describe the physiological response to pain.
22. Distinguish between endocrine and exocrine glands.
23. Explain how negative feedback mechanisms regulate the secretion of endocrine hormones.
24. Describe the structure and function of the endocrine system.
25. Distinguish between various blood types.
26. Describe the structure and function of blood.
27. Describe the structure and function of the circulatory system.
28. Trace a drop of blood through the body.
29. Distinguish between various types of blood vessels.
30. Describe the structure and function of the lymphatic system.
31. Differentiate between acquired, active and passive immunity.
32. Describe the structure and function of the respiratory system.
33. Describe the process of ventilation and gas exchange.
34. Discuss the structure and function of the digestive system.
35. Describe the structure and function of the urinary system.
36. Discuss the role of the lungs and kidneys in maintaining acid base balance.
37. Describe the role of the kidneys in regulating fluid and electrolytes.
38. Describe the structure and function of the male and female reproductive system.
39. Describe the menstrual cycle.

#### **IV. Course Content**

- A. Introduction to the Human Body
  1. Body systems
  2. Body processes
  3. Body planes
  4. Body cavities
- B. Chemical Basis of Life
  1. Atoms
  2. Elements, molecules and compounds
  3. Chemical bonds
  4. Acids, bases, buffers
  5. Organic compounds
- C. Cells
  1. Structure of the cell
  2. Cell functions
  3. Cell division
  4. Osmosis and diffusion
- D. Tissues
  1. Epithelial
  2. Connective
  3. Muscle
  4. Nerve
  5. Membranes

- E. Integumentary System
  - 1. Layers of skin
  - 2. Appendages of the skin
  - 3. Functions of the skin
- F. Skeletal System
  - 1. Bone structure
  - 2. Growth and repair
  - 3. Function of bone
  - 4. Divisions of skeleton
  - 5. Landmarks
  - 6. Joints
- G. Muscular System
  - 1. Characteristics of skeletal muscle
  - 2. Muscles and energy
  - 3. Muscle contraction
  - 4. Attachment of skeletal muscles
  - 5. Muscle movement
  - 6. Skeletal muscle groups
  - 7. Cardiac muscle
- H. Circulatory System
  - 1. Structure and function of blood vessels
  - 2. Structure and function of the heart
  - 3. Blood pressure
  - 4. Heart rate
  - 5. Blood components
- I. Lymphatic System
  - 1. Lymph transport
  - 2. Lymph functions
  - 3. Lymph tissues
- J. Respiratory System
  - 1. Organs of respiration
  - 2. Mechanics of respiration
  - 3. Alveolar gas exchange
  - 4. Regulation of respiration
- K. Digestive System
  - 1. Organs of digestion
  - 2. Accessory organs of digestion
  - 3. Process of digestion
- L. Urinary System
  - 1. Urinary structures
  - 2. Urine formation
  - 3. Acid base balance
  - 4. Electrolytes
- M. Reproductive System
  - 1. Organs of female reproduction
  - 2. Organs of male reproduction
  - 3. Mammary glands
  - 4. Hormonal control
  - 5. Menstrual cycle
- N. Endocrine System

1. Glands
  2. Hormones and their actions
  3. Regulation of hormones
- O. Nervous System
1. Nerve cells
  2. Central nervous system
  3. Peripheral nervous system
  4. Autonomic nervous system
  5. Structure and function of the spinal cord
  6. Structure and function of the brain
- P. Special Senses
1. Structure and function of the eye
  2. Structure and function of the ear
  3. Other special senses - taste, smell, touch, pressure
  4. Pain
  5. Proprioception

## **V. Assignments**

### **A. Appropriate Readings**

Recent articles from nursing journals and textbook.

### **B. Writing Assignments**

Research paper.

### **C. Expected Outside Assignments**

Reading of text and review of lecture notes.

### **D. Specific Assignments that Demonstrate Critical Thinking**

Testing procedures will require critical thinking to elicit correct responses.

## **VI. Methods of Evaluation**

### **Traditional Classroom Instruction**

Term paper (topic choice, thesis statement, outline, bibliography, rough draft, final draft), homework, classroom discussion, essay, journals, lab demonstrations and activities, multiple choice quizzes, and participation.

### **Hybrid Evaluation**

All quizzes and exams will be administered during the in person class time. Students will be expected to complete online assignments and activities equivalent to in class assignments and activities for the online portion of the course. Electronic communication, both synchronous and asynchronous (chat/forum) will be evaluated for participation and to maintain effective communication between instructor and students.

### **Online Evaluation**

A variety of methods will be used, such as: research papers, asynchronous and synchronous (chat/forum) discussions, online quizzes and exams, posting to online website and email communications using the districts approved learning management system.

## **VII. Methods of Delivery**

Check those delivery methods for which, this course has been separately approved by the Curriculum/Academic Standards Committee.

**Traditional Classroom Delivery**  Correspondence Delivery

Hybrid Delivery

Online Delivery

### **Traditional Classroom Instruction**

Lecture, PowerPoint, and other media presentations, discussions, scenarios, and group presentations.

### **Hybrid Delivery**

A combination of traditional classroom and online instruction will be utilized. Each semester a minimum of 1/3 of the lecture hours, will be taught face-to face by the instructor and the remaining hours will be instructed online through the technology platform adopted by the District. Traditional class instruction will consist of exercises/assignments, lectures, visual aids, and practice exercises. Online delivery will consist of exercises/assignments, lecture posts, discussions, adding extra resources and other media sources as appropriate.

### **Online Delivery**

A variety of methods will be used, such as: research papers, asynchronous and synchronous (chat/forum) discussions, online quizzes and exams, posting to online website and email communications using the districts approved learning management system.

## **VIII. Representative Texts and Supplies**

This course uses digital course materials designed using Open Educational Resources (ORE), high-quality, open licensed educational materials, rather than a traditional textbook. You can access all readings, videos, quizzes and other activities through the digital learning platform adopted by the college.

### *Anatomy and Physiology:*

Betts, J.G., Young, K.A., Wise, J.A., Johnson, E., Poe, B., Kruse, D. H., Korol, O., Johnson, J.E., Womble, M. & DeSaix, P. (2013) (Update 2022). Anatomy and Physiology. OpenStax. <http://cnx.org/content/col11496/latest/>

## **IX. Discipline/s Assignment**

Biological Sciences, Health Care Ancillaries, Licensed Vocational Nursing, Nursing

## **X. Course Status**

Current Status: Active

Original Approval Date: 2/27/1990

Revised By: Christi Myers

Curriculum/Academic Standards Committee Revision Date: 04/18/2023