

EASTERN ARIZONA COLLEGE
Human Anatomy and Physiology I
Course Design
2018-2019

Course Information

Division Science
Course Number BIO 201 (SUN# BIO 2201)
Title Human Anatomy and Physiology I
Credits 4
Developed by Tammy Gillespie
Lecture/Lab Ratio 3 Lecture/3 Lab

Transfer Status

ASU	NAU	UA
BIO 201, Natural Science - General (SG)	BIO 201 --and-- BIO 201L	PSIO 201

Activity Course No
CIP Code 26.0400
Assessment Mode Final Exam (120 Questions/120 Points)
Semester Taught Fall and Spring
GE Category Lab Science
Separate Lab Yes
Awareness Course No
Intensive Writing Course No
Diversity and Inclusion Course No

Prerequisites

A grade of "C" or higher in one of the following courses: BIO 100, BIO 160, BIO 181, CHM 130, CHM 138 or CHM 151

Educational Value

This course is the first of a two-semester sequence in which human anatomy and physiology are studied using a body systems approach, with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Human Anatomy and Physiology I includes basic anatomical and directional terminology; fundamental concepts and principles of cell biology; histology; the integumentary, skeletal, muscular, and nervous systems; and special senses.

Description

Study of the structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system.

Supplies

None

Competencies and Performance Standards

1. Identify directional terminology

Learning objectives

What you will learn as you master the competency:

- a. Ascertain body parts using directional terms.
- b. Identify body position.
- c. Identify body surfaces.
- d. Identify body planes and sections.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies body surfaces
- o learner illustrates body planes and sections
- o learner illustrates body position and direction

2. Identify basic organic molecules

Learning objectives

What you will learn as you master the competency:

- a. Identify atomic ingredients for a monosaccharide.
- b. Identify atomic ingredients for a polysaccharide.
- c. Identify atomic ingredients for a triglyceride.
- d. Identify atomic ingredients for a steroid.
- e. Identify atomic ingredients for a phospholipid.
- f. Identify atomic ingredients for a protein.
- g. Identify atomic ingredients for DNA.
- h. Identify atomic ingredients for RNA.
- i. Identify atomic ingredients for ATP.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test

Your performance will be successful when:

- o learner describes the features of carbohydrates
- o learner describes the features of lipids

- o learner describes the features of proteins
- o learner identifies atomic ingredients for nucleotides

3. Identify basic cell structure and function

Learning objectives

What you will learn as you master the competency:

- a. List the components of a cell membrane.
- b. Describe the function of channel proteins.
- c. Describe the function of transport proteins.
- d. Describe the function of recognition (receptor) proteins.
- e. Describe the active transport processes.
- f. Describe the passive transport processes.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies the parts of a cell
- o learner describes the features of a cell membrane
- o learner identifies the function of the cell organelles

4. Identify various tissue types

Learning objectives

What you will learn as you master the competency:

- a. Discriminate between neurons and neuroglia.
- b. Discriminate between simple, stratified, pseudostratified, squamous, suboidal, columnar, ciliated, nonciliated, and transitional epithelium.
- c. Discriminate between bone, blood, cartilage, adipose, loose and dense connective tissue.
- d. Discriminate between skeletal, cardiac, and smooth muscle.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o by identification on a microscope slide
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies various epithelial tissue
- o learner identifies various connective tissue
- o learner identifies various muscle tissue
- o learner identifies various nervous tissue

5. Identify anatomical features of the integumentary system

Learning objectives

What you will learn as you master the competency:

- a. Identify the features of the epidermis, dermis, and hypodermis.
- b. Identify the accessory structures of the integumentary system.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies the features of the epidermis, dermis, and hypodermis
- o learner identifies the accessory structures of the integumentary system

6. Identify anatomical features of the skeletal system

Learning objectives

What you will learn as you master the competency:

- a. Identify the features of skeletal tissue.
- b. Identify the bones of the human skeleton.
- c. Identify landmarks on bones of the human skeleton.
- d. Identify articulations between bones.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies features of skeletal tissue
- o learner identifies the bones of the human skeleton
- o learner identifies the landmarks on bones of the human skeleton
- o learner identifies articulations between bones

7. Identify anatomical features of the muscular system

Learning objectives

What you will learn as you master the competency:

- a. Identify components of muscle.
- b. Differentiate between different muscle types.

Performance Standards

You will demonstrate your competence:

- o through class discussion

- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies the components of muscle
- o learner differentiates between different muscle types

8. Identify anatomical features of the nervous system

Learning objectives

What you will learn as you master the competency:

- a. List components of the central nervous system.
- b. List components of the peripheral nervous system.
- c. List components of the somatic system.
- d. List components of the autonomic system.
- e. Identify types of nerve cells.
- f. Identify parts of a neuron.
- g. Identify parts of the brain.
- h. Identify parts of the spinal cord.
- i. Identify meninges, cerebrospinal fluid, and ventricles.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner lists components of the central nervous system
- o learner lists components of the peripheral nervous system
- o learner lists components of the somatic system
- o learner lists components of the autonomic system
- o learner identifies types of nerve cells
- o learner identifies parts of a neuron
- o learner identifies parts of the brain
- o learner identifies parts of the spinal cord
- o learner identifies meninges, cerebrospinal fluid, and ventricles

9. Identify anatomical features of special senses

Learning objectives

What you will learn as you master the competency:

- a. Identify parts of the eye and its accessory structures.
- b. Identify features of the tunics of the eye.
- c. Identify olfactory structures.
- d. Identify gustatory structures.

- e. Identify structures of the outer, middle and inner ear.
- f. Identify features of the equilibrium organs.
- g. Identify features of the auditory organs.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies parts of the eye and its accessory structures
- o learner identifies features of the tunics of the eye
- o learner identifies olfactory structures
- o learner identifies gustatory structures
- o learner identifies structures of the outer, middle and inner ear
- o learner identifies features of equilibrium organs
- o learner identifies features of auditory organs

10. Describe functions of the integumentary system

Learning objectives

What you will learn as you master the competency:

- a. Identify basic skin functions.
- b. Identify skin diseases.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies basic skin functions
- o learner identifies skin diseases

11. Describe functions of the skeletal system

Learning objectives

What you will learn as you master the competency:

- a. Identify functions of bones.
- b. Identify bone fractures.
- c. Identify the processes involved in bone formation, growth, and remodeling.
- d. Identify synovial joint movements.
- e. Identify joint disorders.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies functions of bones
- o learner identifies bone fractures
- o learner identifies the processes involved in bone formation, growth, and remodeling
- o learner identifies synovial joint movements
- o learner identifies joint disorders

12. Describe functions of the muscular system

Learning objectives

What you will learn as you master the competency:

- a. Identify muscle functions.
- b. Identify components in the sliding filament theory.
- c. Identify features of whole muscle contraction.
- d. Identify types of muscle movement.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies muscle functions
- o learner identifies components of sliding filament theory
- o learner identifies features of whole muscle contractions
- o learner identifies types of muscle movement

13. Describe functions of the nervous system

Learning objectives

What you will learn as you master the competency:

- a. Identify components of the polarization, depolarization, and repolarization processes.
- b. Identify features of nerve impulse transmission.
- c. Identify features of synaptic transmission.
- d. Identify brain functions.
- e. Identify brain dysfunctions.
- f. Identify reflex activities.
- g. Identify autonomic functions.

Performance Standards

You will demonstrate your competence:

- o through class discussion

- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies components of the polarization, depolarization, and repolarization processes
- o learner identifies features of nerve impulse transmission
- o learner identifies features of synaptic transmission
- o learner identifies brain functions
- o learner identifies brain dysfunctions
- o learner identifies reflex activities
- o learner identifies autonomic functions

14. Describe functions of the special senses

Learning objectives

What you will learn as you master the competency:

- a. Identify components of visual physiology.
- b. Identify components of olfactory physiology.
- c. Identify components of gustatory physiology.
- d. Identify components of auditory physiology.
- e. Identify components of equilibrium physiology.

Performance Standards

You will demonstrate your competence:

- o through class discussion
- o on an objective test
- o on a lab practical and lab quizzes

Your performance will be successful when:

- o learner identifies components of visual physiology
- o learner identifies components of olfactory physiology
- o learner identifies components of gustatory physiology
- o learner identifies components of auditory physiology
- o learner identifies components of equilibrium physiology

Types of Instruction

Classroom Presentation

On Campus Laboratory

Grading Information

Grading Rationale

Laboratory Work - 30%

Lecture Tests - 60%

Final Exam - 10%

Grading Scale

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F.	Below 60%