WTCS Repository

10-806-189 Basic Anatomy

Course Outcome Summary

Course Information

Description Examines concepts of anatomy and physiology as they relate to health careers. Learners correlate anatomical and physiological terminology to all body systems.

Total Credits 3.00

Pre/Corequisites

Prerequisite Each Wisconsin Technical College determines the General Education course prerequisites used by their academic institution. If prerequisites for a course are determined to be appropriate, the final Course Outcome Summary must identify the prerequisites approved for use by the individual Technical College.

Course Competencies

1. Explain concept of homeostasis as it relates to anatomy and physiology.

Assessment Strategies

1.1. by active participation in group activities.
1.2. without the use of notes or textbooks on a written examination.
1.3. by achieving a 76% or higher on a written examination.

Criteria

1.1. Comparison includes similarities and differences between anatomy and physiology.
1.2. Learner provides physiological and anatomical examples of homeostasis.
1.3. Correlation includes relationship between negative feedback mechanisms and homeostasis.

2. Relate body structures to body systems and functions.

Assessment Strategies

2.1. by active participation in group activities.
2.2. without the use of notes or textbooks on a written examination.
2.3. by achieving a 76% or higher on a written examination.

Criteria

2.1. Learner identifies organs and tissues within each body system.
2.2. Body's levels of organization are outlined.
2.3. Terminology associated with body's level of organization is examined.
2.4. Body functions and body systems are linked.

3. Relate anatomical terminology to body regions, body and organ planes, and body cavities.

Assessment Strategies

3.1. by active participation in group activities.
3.2. without the use of notes or textbooks on a written examination.
3.3. by achieving a 76% or higher on a written examination.

Criteria

3.1. Learner demonstrates correct anatomical position.
3.2. Terminology associated with sections, planes, and body structure positional relationships is applied.
3.3. Abdominal organs are identified by abdominopelvic cavity regions.
3.4. Viscera are identified by their specific body cavities.

4. Examine basic concepts of chemistry.

Assessment Strategies

4.1. by active participation in group activities.
4.2. without the use of notes or textbooks on a written examination.
4.3. by achieving a 76% or higher on a written examination.

Criteria

4.1. Comparison includes similarities and differences between types of chemical bonds.
4.2. Examination includes the functions and body compartments of water.
4.3. Components of a solution are characterized by amount, consistency, and function.
4.4. Concept of homeostasis is applied to pH of body fluids.
4.5. Comparison includes similarities and differences between RNA and DNA.
4.6. Role of enzymes in body is examined.

5. Compare cellular transport mechanisms.

Assessment Strategies

5.1. by active participation in group activities.
5.2. without the use of notes or textbooks on a written examination.
5.3. by achieving a 76% or higher on a written examination.

Criteria

5.1. Components of cell membrane are analyzed.
5.2. Learner identifies intracellular components.
5.3. Intracellular components of a cell are related to the functions of a cell.
5.4. Transport mechanisms of a cell are characterized by action and function.

6. Examine major cellular functions.

Assessment Strategies

6.1. by active participation in group activities.
6.2. without the use of notes or textbooks on a written examination.
6.3. by achieving a 76% or higher on a written examination.

Criteria

6.1. Steps of protein synthesis are identified.
6.2. Comparison includes similarities and differences between mitosis and meiosis.
6.3. Outcomes or consequences of mitosis and meiosis are compared.

7. Characterize primary tissue types of body.

Assessment Strategies

7.1. by active participation in group activities.
7.2. without the use of notes or textbooks on a written examination.
7.3. by achieving a 76% or higher on a written examination.

Criteria

7.1. Identifies primary tissues of body according to location and function.
7.2. Components within each primary tissue type are compared.
7.3. Serous and mucous membranes of body are compared.
7.4. Comparison includes similarities and differences between epithelial tissues.

8. Relate integumentary components to integumentary functions.

Assessment Strategies

8.1. by active participation in group activities.
8.2. without the use of notes or textbooks on a written examination.
8.3. by achieving a 76% or higher on a written examination.

Criteria

8.1. Functions of integumentary system are identified.
8.2. Location, structure, and function of layers of skin are compared.
8.3. Hair is characterized by structure and location.
8.4. Tissues of integumentary system are identified according to location and function.

9. Evaluate the inflammation process.

Assessment Strategies

9.1. by active participation in group activities.
9.2. without the use of notes or textbooks on a written examination.
9.3. by achieving a 76% or higher on a written examination.

Criteria

9.1. Examination process includes the significance of inflammation.
9.2. Evaluation includes symptoms of both local and systemic inflammation.
9.3. Symptoms of inflammation are explained by anatomical and physiological changes.
9.4. Evaluation includes influence of chemical mediators in the inflammatory process.

10. Compare the axial and appendicular portions of human skeleton.

Assessment Strategies

10.1. by active participation in group activities.
10.2. without the use of notes or textbooks on a written examination.
10.3. by achieving a 76% or higher on a written examination.

Criteria

10.1. Comparison includes differences between axial and appendicular skeleton.
10.2. Bones of axial and appendicular skeleton are identified correctly.
10.3. Comparison includes similarities and differences between bone shapes and gross anatomical characteristics.
10.4. Cells of bone are compared.
10.5. Composition of bone is examined.

11. Assess growth of bone tissue.

Assessment Strategies

11.1. by active participation in group activities.
11.2. without the use of notes or textbooks on a written examination.
11.3. by achieving a 76% or higher on a written examination.

Criteria

11.1. Steps in bone growth are characterized by anatomical and physiological changes.
11.2. Cells of bone growth are identified.
11.3. Analysis includes factors that affect bone growth and bone maintenance.
11.4. Disease process of osteoporosis is compared to normal bone maintenance.

12. Correlate activities at neuromuscular junction with the sliding filament theory.

Assessment Strategies

12.1. by active participation in group activities.
12.2. without the use of notes or textbooks on a written examination.
12.3. by achieving a 76% or higher on a written examination.

Criteria

12.1. Energy requirements of a contracting muscle are examined.
12.2. Phases of sliding filament theory are characterized by outcome and interaction between muscle filaments.
12.3. Comparison includes similarities and differences between isotonic and isometric contractions.
12.4. Comparison includes similarities and differences between a polarized muscle cell and a depolarized muscle cell.
12.5. Major muscles of body are identified.
12.6. Interaction between nerve tissue and muscle tissue is analyzed.

12.7. Structure of a normal muscle fiber is identified.
12.8. Anatognistic and synergistic muscles are compared.

13. Compare divisions of nervous system by location, structure, and functions.

Assessment Strategies

13.1. by active participation in group activities.
13.2. without the use of notes or textbooks on a written examination.
13.3. by achieving a 76% or higher on a written examination.

Criteria

13.1. Divisions of nervous system are identified.
13.2. Comparison includes similarities and differences between cells of nerve tissue.
13.3. Actions at a synapse are characterized by anatomical and physiological changes.
13.4. Types of neurons and nerves are compared by structure, location, and function.
13.5. Components of a reflex arc are identified.
13.6. Comparison includes similarities and differences between brain structures.
13.7. Spinal and cranial nerves are compared by numbers, location, and function.
13.8. Divisions of autonomic nervous system are compared by function.

14. Compare sensory receptors of body tissues.

Assessment Strategies

14.1. by active participation in group activities.
14.2. without the use of notes or textbooks on a written examination.
14.3. by achieving a 76% or higher on a written examination.

Criteria

14.1. Examination includes significance of referred pain.
14.2. Comparison includes similarities and differences between senses of hunger, thirst, and taste.
14.3. Examination includes structures and their functions in the sound pathway.
14.4. Physiology of vision is examined.
14.5. Structures of eye and ear are correlated to the functions of the eye and ear.
14.6. Tissue sensory receptors are identified according to location and function.

15. Relate hormone actions to tissues.

Assessment Strategies

15.1. by active participation in group activities.
15.2. without the use of notes or textbooks on a written examination.
15.3. by achieving a 76% or higher on a written examination.

Criteria

15.1. Examination includes the role hormones play in maintaining homeostasis.
15.2. Hormones are classified by chemical structure.
15.3. Components of endocrine system are identified by location, structure, and function.
15.4. Actions of hormones are compared.
15.5. Comparison includes similarities and differences between the hormones secreted, functions of those hormones, structure and hypothalamus interaction between anterior and posterior pituitary.

16. Analyze composition and functions of blood.

Assessment Strategies

16.1. by active participation in group activities.
16.2. without the use of notes or textbooks on a written examination.
16.3. by achieving a 76% or higher on a written examination.

Criteria

16.1. Learner identifies characteristics and normal values of blood.
16.2. Plasma proteins are compared by abundance and functions.
16.3. Structure of an erythrocyte is correlated to its functions.
16.4. Examination includes steps of erythropoeisis.
16.5. Types of anemia are correlated to anatomical and physiological changes of an erythrocyte.
16.6. Explanation includes what happens to an erythrocyte when its lifespan expires.
16.7. Blood types are compared by antigen and antibody arrangement.

16.8. Leukocytes are classified by functions.
16.9. Functions of platelets are identified.
16.10. Assessment includes stages of hemostasis.

17. Analyze regulation of blood flow.

Assessment Strategies

17.1. by active participation in group activities.
17.2. without the use of notes or textbooks on a written examination.
17.3. by achieving a 76% or higher on a written examination.

Criteria

17.1. Structure and function of types of blood vessels are contrasted.
17.2. Pulmonary and systemic circulation are compared.
17.3. Major blood vessels of body are identified according to location.
17.4. Relationship between blood vessel type and blood pressure are correlated.
17.5. Body systems and tissues involved in regulating blood pressure are identified according to actions.

18. Evaluate mechanisms that regulate heart rate.

Assessment Strategies

18.1. by active participation in group activities.
18.2. without the use of notes or textbooks on a written examination.
18.3. by achieving a 76% or higher on a written examination.

Criteria

18.1. Relationship between heart chambers and their respective blood vessels are established.
18.2. Relationship between heart chambers and their respective heart valves are established.
18.3. Blood flow through heart is demonstrated.
18.4. Blood flow to and within myocardium is identified.
18.5. Events of cardiac cycle are characterized by sequence and outcome.
18.6. Normal heart rate values are identified.
18.7. Terminology associated with heart functions is contrasted by action and outcome.
18.8. Brain centers involved in regulating blood pressure are examined.

19. Analyze components of lymphatic system.

Assessment Strategies

19.1. by active participation in group activities.
19.2. without the use of notes or textbooks on a written examination.
19.3. by achieving a 76% or higher on a written examination.

Criteria

19.1. Composition of lymph is characterized by amount, origin, and function.
19.2. Comparison includes similarities and differences between types of lymphatic vessels.
19.3. Locations of lymphatic nodes and nodules are identified.
19.4. Relationship between spleen structure and function are established.
19.5. Relationship between thymus structure and function are established.

20. Compare types of immunity.

Assessment Strategies

20.1. by active participation in group activities.
20.2. without the use of notes or textbooks on a written examination.
20.3. by achieving a 76% or higher on a written examination.

Criteria

20.1. Cells of immunity are identified according to origin and function.
20.2. Comparison includes similarities and differences between antigens and antibodies.
20.3. Comparison includes similarities and differences between acquired and genetic immunity.
20.4. Analysis includes actions of cell-mediated and humoral immunity.

21. Evaluate ventilation.

Assessment Strategies

21.1. by active participation in group activities.
21.2. without the use of notes or textbooks on a written examination.
21.3. by achieving a 76% or higher on a written examination.

Criteria

21.1. Components of upper and lower respiratory tract are compared by location, structure, and function.
21.2. Lung serous and mucous membranes are identified according to location and function.
21.3. Mechanisms of inspiration and expiration are characterized.
21.4. Assessment includes location and process of gas exchange.
21.5. Transportation of oxygen and carbon dioxide in body are compared.
21.6. Various measurements of pulmonary volumes are analyzed.
21.7. Interactions between chemoreceptors and nerve tissue in maintaining homeostasis of respiration are established.
21.8. Relationship between blood pH and respiration is established.

22. Analyze digestion and absorption.

Assessment Strategies

22.1. by active participation in group activities.
22.2. without the use of notes or textbooks on a written examination.
22.3. by achieving a 76% or higher on a written examination.

Criteria

22.1. Learner maps food pathway from oral cavity to rectum.
22.2. Divisions of digestive system are compared by structures included, location, and overall function.
22.3. Digestive system structures and their respective functions are compared.
22.4. Layers of alimentary canal wall are identified.
22.5. Functions of liver are compared.
22.6. Functions of small and large intestine are compared.
22.7. Examination includes structures and process of defecation reflex.

23. Assess the urinary system's role in maintaining homeostasis of blood volume, blood pressure, and blood pH.

Assessment Strategies

23.1. by active participation in group activities.
23.2. without the use of notes or textbooks on a written examination.
23.3. by achieving a 76% or higher on a written examination.

Criteria

23.1. Functions of urinary system are identified.
23.2. Components of urinary system are identified by microscopic and gross anatomical appearance.
23.3. Urine formation is analyzed by process and regulation.
23.4. Examination includes process by which kidneys regulation blood pH.
23.5. Urination reflex is evaluated.
23.6. Comparison includes similarities and differences between mechanisms of water intake and water output.
23.7. Analysis includes clinical relevance of electrolyte concentrations in body fluids.
23.8. types of acidosis and alkalosis are compared.

24. Differentiate between stages of menstrual cycle.

Assessment Strategies

24.1. by active participation in group activities.
24.2. without the use of notes or textbooks on a written examination.
24.3. by achieving a 76% or higher on a written examination.

Criteria

24.1. Structures of female reproductive system are identified.
24.2. Interactions between pituitary hormones and ovaries and mammary glands are compared.
24.3. Analysis includes follicular changes during menstrual cycle.

25. Analyze stages of spermatogenesis.

Assessment Strategies

25.1. by active participation in group activities.
25.2. without the use of notes or textbooks on a written examination.
25.3. by achieving a 76% or higher on a written examination.

Criteria

25.1. Learner maps route sperm take through male reproductive system.
25.2. Structures of male reproductive system are identified.
25.3. Relationship between accessory reproductive glands and spermatogenesis is established.
25.4. Cells of spermatogenesis are identified according to location and function.

26. Correlate microbiology terminology with human disease processes.

Assessment Strategies

26.1. by active participation in group activities.
26.2. without the use of notes or textbooks on a written examination.
26.3. by achieving a 76% or higher on a written examination.

Criteria

26.1. Comparison includes similarities and differences between common microorganisms.
26.2. Terminology associated with reservoirs and spread of infection are classified.
26.3. Portals of microorganism entry and exit are compared.
26.4. Relationship between disease and specific types of microorganisms is examined.