

## WTCS Repository

10-806-189 Basic Anatomy

# Course Outcome Summary

### Course Information

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|  | Description | Examines concepts of anatomy and physiology as they relate to health careers. Learners correlate anatomical and physiological terminology to all body systems. |
|  | Instructional Level | Associate Degree |
|  | Total Credits | 3 |

Pre/Corequisites

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| 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

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| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 1.a. | Compare anatomy and physiology. |
|  | 1.b. | Identify anatomical and physiological examples of homeostasis. |
|  | 1.c. | Correlate concept of negative feedback mechanism to 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 2.a. | Correlate major body tissues and organs to systems of body. |
|  | 2.b. | Outline levels of organization within body from simplest to most complex. |
|  | 2.c. | Examine terminology associated with levels of body organization. |
|  | 2.d. | Correlate body systems with body functions. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 3.a. | Illustrate correct anatomical position. |
|  | 3.b. | Apply terms used to describe relationships of body structures to one another. |
|  | 3.c. | Apply terms used to describe sections and planes of body and body structure. |
|  | 3.d. | Correlate components of abdominopelvic cavity to specific abdominal regions. |
|  | 3.e. | Correlate components of body to 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 4.a. | Characterize terminology associated with building blocks of chemistry. |
|  | 4.b. | Compare types of chemical bonds. |
|  | 4.c. | Examine functions and locations of water. |
|  | 4.d. | Characterize components of a solution. |
|  | 4.e. | Compare oxygen and carbon dioxide. |
|  | 4.f. | Identify trace elements. |
|  | 4.g. | Correlate pH of body fluids to concept of homeostasis. |
|  | 4.h. | Characterize complex molecules by their structure and functions. |
|  | 4.i. | Compare RNA and DNA by structure, location and function. |
|  | 4.j. | Examine role of enzymes in body functions. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 5.a. | Analyze components of cell membrane. |
|  | 5.b. | Identify intracellular components. |
|  | 5.c. | Relate cell structures to cell functions. |
|  | 5.d. | Characterize types of transport systems used by cells. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 6.a. | Identify steps of protein synthesis |
|  | 6.b. | Compare stages of mitosis and meiosis. |
|  | 6.c. | Compare outcomes of mitosis and meiosis. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 7.a. | Identify primary tissues of body by location. |
|  | 7.b. | Identify primary tissues of body by function. |
|  | 7.c. | Compare components of each type of primary tissue. |
|  | 7.d. | Compare membranes associated with body tissues. |
|  | 7.e. | Compare types of epithelium by structure, location and function. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 8.a. | Identify functions of integumentary system. |
|  | 8.b. | Compare layers of skin. |
|  | 8.c. | Characterize hair by structure and location. |
|  | 8.d. | Identify location and functions of integumentary nerve tissue, glands and blood vessels. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 9.a. | Examine purpose of inflammatory process. |
|  | 9.b. | Analyze role of chemical mediators in the inflammatory process. |
|  | 9.c. | Characterize symptoms of inflammation. |
|  | 9.d. | Correlate anatomical changes of inflammatory process to symptoms. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 10.a. | Differentiate between components of axial and appendicular skeleton. |
|  | 10.b. | Identify bones of axial and appendicular skeleton. |
|  | 10.c. | Compare bones by shape and gross anatomical appearance. |
|  | 10.d. | Compare types of bone cells. |
|  | 10.e. | Examine significance of chemical composition of bone. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 11.a. | Characterize steps involved in bone growth. |
|  | 11.b. | Identify cells involved in bone growth. |
|  | 11.c. | Analyze factors that affect bone growth and maintenance. |
|  | 11.d. | Contrast osteoporosis disease process and bone growth. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 12.a. | Identify structure of a muscle fiber. |
|  | 12.b. | Characterize muscles as antagonistic or synergistic. |
|  | 12.c. | Compare isotonic and isometric muscle contractions (exercise). |
|  | 12.d. | Analyze role of nerve tissues (e.g. brain structures, nerve receptors, etc.) in regulating muscle function. |
|  | 12.e. | Examine metabolism requirements of a contracting skeletal muscle. |
|  | 12.f. | Compare steps of polarization and depolarization. |
|  | 12.g. | Break down sliding filament theory into steps. |
|  | 12.h. | Identify major muscles of body. |
|  | 12.i. | Correlate points of insertion and origin to muscle function. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 13.a. | Identify divisions of nervous system. |
|  | 13.b. | Compare cells of nerve tissue. |
|  | 13.c. | Characterize actions at a synapse. |
|  | 13.d. | Compare types of neurons and nerves. |
|  | 13.e. | Analyze structure of spinal cord. |
|  | 13.f. | Correlate components of nervous system to a reflex arc. |
|  | 13.g. | Compare structures of brain by location and function. |
|  | 13.h. | Compare spinal and cranial nerves. |
|  | 13.i. | Compare sympathetic and parasympathetic divisions. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 14.a. | Characterize sensory receptors by sensations. |
|  | 14.b. | Explain referred pain. |
|  | 14.c. | Compare senses of thirst, hunger and taste. |
|  | 14.d. | Examine physiology of vision. |
|  | 14.e. | Examine sound pathway. |
|  | 14.f. | Correlate major structures of the eye and ear with their respective functions. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 15.a. | Examine role of hormones in homeostasis. |
|  | 15.b. | Classify hormones by chemical structure. |
|  | 15.c. | Identify components of endocrine system. |
|  | 15.d. | Compare mechanisms of hormone action. |
|  | 15.e. | Compare 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 16.a. | Identify characteristics and normal values of blood. |
|  | 16.b. | Compare plasma proteins. |
|  | 16.c. | Correlate structure of erythrocytes to erythrocyte functions. |
|  | 16.d. | Examine erythropoeisis. |
|  | 16.e. | Correlate pathology of erthyrocytes to types of anemia. |
|  | 16.f. | Explain what happens to an erythrocyte when its life span is expired. |
|  | 16.g. | Compare blood types. |
|  | 16.h. | Classify leukocytes by functions. |
|  | 16.i. | Identify functions of platelets. |
|  | 16.j. | Assess 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 17.a. | Contrast arteries, veins and capillaries. |
|  | 17.b. | Compare pulmonary and systemic circulation. |
|  | 17.c. | Identify major blood vessels of body. |
|  | 17.d. | Correlate blood pressure to types of blood vessels. |
|  | 17.e. | Identify body systems involved in maintaining and regulating blood pressure. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 18.a. | Correlate chambers of heart to their respective blood vessels. |
|  | 18.b. | Correlate chambers of heart with their respective heart valves. |
|  | 18.c. | Map blood flow through heart. |
|  | 18.d. | Identify blood vessels of myocardium. |
|  | 18.e. | Characterize sequence of events in the cardiac cycle. |
|  | 18.f. | Analyze cardiac conduction pathway. |
|  | 18.g. | Contrast terminology associated with heart functions (e.g. stroke volume, venous return). |
|  | 18.h. | Examine brain centers involved in regulating blood pressure. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 19.a. | Characterize composition of lymph. |
|  | 19.b. | Compare types of lymphatic vessels. |
|  | 19.c. | Identify areas of lymphatic nodes and lymphatic nodules. |
|  | 19.d. | Correlate structure of spleen with its functions. |
|  | 19.e. | Correlate structure of thymus with its functions. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 20.a. | Identify cells of immunity. |
|  | 20.b. | Compare antigens and antibodies. |
|  | 20.c. | Compare acquired and genetic immunity. |
|  | 20.d. | Analyze 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 21.a. | Compare structures of upper and lower respiratory tracts. |
|  | 21.b. | Identify location and functions of lung serous membranes. |
|  | 21.c. | Characterize mechanisms of air movement during inspiration and expiration. |
|  | 21.d. | Assess gas exchange. |
|  | 21.e. | Compare oxygen and carbon dioxide transportation. |
|  | 21.f. | Analyze terminology associated with measuring pulmonary volumes. |
|  | 21.g. | Correlate actions of chemoreceptors with nervous system regulation of ventilation. |
|  | 21.h. | Relate ventilation with pH balance of blood. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 22.a. | Map pathway food products take from the oral cavity to the rectum. |
|  | 22.b. | Compare divisions of digestive system. |
|  | 22.c. | Compare functions of structures within the digestive system. |
|  | 22.d. | Identify layers of alimentary canal wall. |
|  | 22.e. | Compare functions of liver. |
|  | 22.f. | Compare functions of large and small intestines. |
|  | 22.g. | Examine 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 23.a. | Identify functions of urinary system. |
|  | 23.b. | Identify gross anatomical and microscopic appearance of urinary system components. |
|  | 23.c. | Analyze urine formation. |
|  | 23.d. | Compare mechanisms that regulate urine formation. |
|  | 23.e. | Examine how kidneys balance pH of body fluids (particularly blood). |
|  | 23.f. | Analyze clinical relevance of urine composition. |
|  | 23.g. | Evaluate urination reflex. |
|  | 23.h. | Compare mechanisms that regulate water intake and output. |
|  | 23.i. | Analyze electrolyte concentrations in body fluids and the clinical relevance. |
|  | 23.j. | Compare respiratory acidosis and alkalosis. |
|  | 23.k. | Compare metabolic acidosis and alkalosis. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 24.a. | Identify structures of female reproductive system. |
|  | 24.b. | Compare interactions between pituitary hormones and the ovaries and mammary glands. |
|  | 24.c. | Relate changes in endometrium to ovarian cycle. |
|  | 24.d. | Analyze 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 25.a. | Map spermatozoa movement through male reproductive system. |
|  | 25.b. | Identify structures of male reproductive system. |
|  | 25.c. | Relate accessory reproductive glands to spermatogenesis. |
|  | 25.d. | Identify cells of spermatogenesis. |
| 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 | |
|  | 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. |
|  | Learning Objectives | |
|  | 26.a. | Compare different types of microorganisms. |
|  | 26.b. | Classify terminology associated with reservoirs of infection and spread of infection. |
|  | 26.c. | Compare portals of entry and portals of exit. |
|  | 26.d. | Examine relationship between disease and specific types of microorganisms. |