

SLO Presentation

A&P

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| SCIENCE, ENGINEERING & MATH |
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| PSLO No PSLOs |
| CSLO A&P120 - Introduction Human Anatomy and Physiology <ul style="list-style-type: none">• A. Describe basic cellular processes and the molecular and cellular basis of human life, including molecular biology and protein synthesis• B. Describe the structures and functions of muscles, muscle cells, and muscle contraction• C. Explain the structures and functions of the human nervous system and the activity of neurons• D. Explain the structures and functions of the human senses and its cells• E. Explain the structures and functions of the human endocrine system• F. Describe the structures and functions of blood and the human cardiovascular system• G. Describe the structures and functions of the human lymphatic and immune systems• H. Identify the structures and describe the functions of the human digestive system• I. Identify the structures and describe the functions of the human respiratory system• J. Identify the structures and describe the functions of the human urinary system• K. Identify the structures and describe the functions of the male and female reproductive systems• L. In lab, describe the physical aspects of cell membrane transport• M. In lab, explain DNA structure, transcription, and protein synthesis• N. In lab, explain the structures and functions of enzymes• O. In lab, identify the major bones of the human skull and appendicular skeleton• P. In lab, identify the major muscles of the human body• Q. In lab, identify the major organs and structures of the human nervous system, cardiovascular system, respiratory system, digestive system, urinary system, and reproductive system• State the functions of the cranial nerves and major spinal nerves A&P150 - Intro To Human Anatomy <ul style="list-style-type: none">• In lab, identify the organs and other significant structures of the human body.• Describe the major structures of a cell and the functions of the major structures• Describe the major tissues of the body (cellular and non-cellular components) and how tissue structure relates to function.• Describe the organs and major structures of each organ system and how its structure relates to its function• Describe the flow of materials through the major tracts and systems of the human body.• Describe the integrated functions of the organ systems.• In lab, apply anatomical terminology.• In lab, identify the major tissues of the body and their components. A&P151 - Intro To Human Physiology <ul style="list-style-type: none">• Explain cellular functions such as membrane transport, protein synthesis, and cellular respiration.• Explain the physiological mechanisms responsible for organ functioning and the integrated functions of the organ systems.• Describe the negative feedback mechanisms used to maintain homeostasis.• Interpret experimental data to demonstrate understanding of physiological processes. |

- Distinguish between the major organic compounds in the body and the functions of each.

A&P200 - Human Anatomy

- A. State the functions of organelles within a cell and relate to the function of the cell
- B. Distinguish between the different stages of embryological development and explain the process of gastrulation and the development of body tissues
- C. Compare and contrast tissues in the body and describe the relationship between structure and function
- D. Distinguish between the different joints in the body based on structure and function and state the movement permitted by each joint
- E. State the functions of the cranial nerves and major spinal nerves
- F. Identify the regions of the brain and spinal cord and state the function of each
- G. Compare and contrast the structure and function of the parasympathetic and sympathetic nervous systems
- H. Construct flowcharts to illustrate sensory and motor pathways
- I. Identify the structure of the heart and blood vessels and describe the relationship between structure and function
- J. Construct flowcharts to illustrate the circulation of blood, lymph and CSF
- K. Distinguish between the formed elements based on structure and function, and explain the process of hemopoiesis
- L. Identify and state the function of organs in the lymphatic system and describe the relationship between structure and function
- M. Identify and state the functions of organs in the digestive system and describe the relationship between structure and function
- N. Identify and state the function of organs in the respiratory system and describe the relationship between structure and function
- P. Identify and state the function of organs in the reproductive system and describe the relationship between structure and function
- O. Identify and state the function of organs in the urinary system and describe the relationship between structure and function
- Q. In lab, identify the location of organs in the body using correct anatomical terminology
- R. In lab, identify the microscopic structure of tissues
- S. In lab, identify all bones and joints in the body and explain the function of processes on bones
- T. In lab, utilize models and microscopy to identify human muscles and organs of the nervous system
- U. In lab, utilize models and microscopy to identify organs and structures of the cardiovascular, respiratory, digestive, urinary, and reproductive systems
- V. In lab, utilize cat dissection to identify organs
- W. In lab, utilize cat dissection to identify muscles

A&P201 - Human Physiology

- A. Distinguish between the major organic compounds in the body and their functions
- B. Explain the processes of DNA replication, transcription and translation
- C. Describe the mechanism of enzyme action and factors that influence enzyme functioning
- D. Compare and contrast the different types of membrane transport and their significance in cell functioning
- E. Describe the fate, function and metabolism of carbohydrates, proteins and lipids
- F. Explain the mechanisms of cell signaling via intracellular receptors, ion channels, enzyme linked receptors, and G-protein linked receptors
- G. Describe the following as they relate to neuron functioning; events at a chemical synapse, mechanism of neurotransmitter action, resting membrane potentials, formation of post-synaptic potentials, and formation of action potentials
- H. Diagram and explain the neural pathways involved in stretch reflexes, reciprocal innervation, withdrawal reflexes and crossed extensor reflexes
- I. Diagram and explain ascending pathways from cutaneous receptors
- J. Identify and state the function of the structures in the eye and ear, describe the formation of neural impulses of vision and sound, and the neural pathways to the brain
- K. Distinguish between hormones based on chemical class, source, function, and regulation of secretion
- L. Compare and contrast the different neurotransmitters, receptors and actions of parasympathetic and sympathetic pathways
- M. Compare and contrast the microscopic structure, neural regulation, mechanism of excitation –contraction coupling, contraction, and relaxation in skeletal muscle and smooth muscle

- N. Describe the regulation of erythropoiesis, destruction of erythrocytes, steps in hemostasis, and blood group determination
- O. Describe the following as they relate to cardiac function; cardiac cycle, formation of action potentials in the cells of the conduction system and ECG's, formation of action potentials in contractile cells, mechanism of excitation-contraction coupling in contractile cells, and regulation of cardiac output
- P. Describe the intrinsic regulation of blood flow and the regulation of blood pressure via the baroreceptor reflex
- Q. Explain the following as they relate to respiratory function: mechanism of pulmonary ventilation, pulmonary and systemic gas exchange; transport of oxygen and carbon dioxide; factors that affect unloading of oxygen; and neural regulation of ventilation rate
- R. Explain the chemical digestion of food by enzymes, neural and endocrine regulation of the digestive process, and the transport processes involved in absorption of nutrients
- S. Describe the process of urine formation and the integrated roles of the urinary, nervous and endocrine systems in the regulation of blood volume, blood pressure, electrolyte and pH balance
- T. Describe the processes of spermatogenesis and oogenesis, and hormonal regulation of the male and female reproductive systems
- U. In lab, demonstrate an understanding of the scientific method, experimental design and interpretation of experimental data
- V. In lab, explain the principles and use of spectrophotometry, thin layer chromatography, gel electrophoresis, and ELISA