

# ANATOMY AND PHYSIOLOGY

## Anatomy

**Theory – 60 hours**  
**(Class 40+ lab 20 hours)**

Unit	Learning Objective	Content	Outcome
I	Describe the anatomical terms, organization of human body and structure of cell, tissues membranes and glands.	<b>Introduction:</b> Systems Cell & Cell Division Tissues (including glands) · Regions, cavities Membranes.	At the end of unit students will able to understand about cell & cell division. Tissues & membrane.
II	Classify the Principal types of bones on the basis of its shape. Describe anatomical position structure and functions of bones and joints - List various abnormal conditions of bones and joints	<b>Skeletal System:</b> Function of bones Typical bone Bone-growth-healing of fracture Skeleton – Axial, Appendicular Bones- Classification <b>Joints:</b> Classification Typical Synovial joint Alteration in Disease Application and implication in nursing.	At the end of unit students will able to known about skeletal system & joints in detail.

Unit	Learning Objective	Content	Outcome
III	Explain the structure and functions of principal muscles of the body. List the disorders of muscular system	<b>Muscular System:</b> Muscular tissue review Typical skeletal muscle/Principles of lever Classification- Shape, red & pale, prime mover, Antagonist, Synergist Muscle groups & movements at a joint Head, face, neck, Back, Upper Limb, Thorax, Abdominal,	At the end of unit students will able to understand about muscular system & enlist disorders of muscular system.

		Pelvis, Perineum, Lower Limb Alteration in Disease Application and implication in nursing.	
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>IV</b>	Describe the anatomical position, size, shape and structure of organs of respiratory system. Enumerate the principal muscles of respiration. List the abnormalities s of respiratory system	<b>Respiratory System:</b> Trachea, lung, pleura Musculoskeletal frame Mechanism of respiration Alteration in Disease Application and implication in nursing.	At the end of unit students will able to known about respiratory system in detail & able to apply nursing implications.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>V</b>	Describe the anatomical position, size, shape and structure of organs of digestive system List the abnormalities of digestive system.	<b>Digestive System:</b> Mouth- Tooth, mastication Salivary glands deglutition, Esophagus Stomach Intestines, Liver, Biliary Apparatus, Pancreas Peritoneum Alteration in disease Application and implication in nursing.	At the end of unit students will able to understand about digestive system in detail & able to apply implications in nursing.

<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>VI</b>	Describe the anatomical position, size, shape and structure of organs Explain arterial, venous and lymphatic circulation. Enumerate the disorders of heart and circulatory system.	<b>Cardiovascular System:</b> Heart & Pericardium Arterial & venous system(Systemic , Pulmonary, Hepatoportal Coronary ) Lymphatic System and Lymphoid tissue Thymus Lymph node Spleen Lymph nodules.	At the end of unit students will able to known about cardiovascular system in detail.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>VII</b>	Describe the anatomical position, size, shape and	<b>Urinary System (Excretory):</b>	At the end of unit students will able to

	structure of organs of urinary system. Explain incontinence and list the abnormalities of urinary system.	Kidney Ureter, Urinary bladder Urethra & continence Skin	known about kidney, ureter ,urinary bladder & urethra in detail.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>VIII</b>	Describe the anatomical position, size, shape and structure of male and female reproductive organs List the abnormalities male and female reproductive system.	<b>Reproductive system:</b> Male reproductive & Female reproductive Breast	At the end of unit students will able to understand about reproductive system in detail.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>IX</b>	Describe the anatomical position, size, shape and structure of various organs of the endocrine system. List the abnormalities of system.	<b>Endocrine System:</b> Pituitary Thyroid Parathyroid & Pancreas Suprarenal	At the end of unit students will able to understand pituitary thyroid, parathyroid & suprarenal in depth.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>X</b>	Describe the anatomical position, size, shape and structure of various organs of the nervous system. Compare the functions of different parts of the brain. List the abnormalities of nervous system	<b>Nervous System:</b> Cerebrum Diencephalon Brainstem & Spinal cord Cerebellum ANS & PNS Ventricles, CSF & Meninges	At the end of unit students will able to known about nervous system in detail.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>XI</b>	Describe the anatomical position, size, shape and structure of various sensory organs. List the abnormalities related to the sense organs.	<b>Sense organs:</b> Eye Ear Nose & tongue Skin	At the end of unit students will able to known about all sense organs of body in depth.

## Physiology

### Placement : First Year

**Theory – 60 hours (Class 50+ Lab 10 hours)**

<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>I</b>	Describe the physiology of cell, tissues membranes and glands	<b>Cell Physiology:</b> Tissue-- formation and repair. Membranes and glands functions Alteration in disease Application in nursing	At the end of unit students will able understand about tissues, membrane & gland in detail.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>

<b>II</b>	Describe the physiology of blood. Demonstrate blood, cell count, coagulation, and grouping, Hb.	<b>Blood:</b> Composition and functions of blood. Classification of blood cells Blood groups, blood coagulation. Hemoglobin: Structure, synthesis and breakdown, variations of molecules, estimation.	At the end of unit students will get knowledge in depth about blood.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>III</b>	Describe the physiology of Lymphatic & immunological system	<b>Lymphatic &amp; immunological system:</b> Circulation of lymph. Immunity. Formation of T cells & B Cells. Types of immune response. Antigens Cytokines Antibodies	At the end of unit students will be able to know about lymphatic & immunological system in detail.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>IV</b>	Describe the neuro muscular transmission, and demonstrate muscle contraction and tone	<b>Muscular System:</b> Neuro muscular transmission. Stimulus & nerve impulse definitions mechanisms. Physiology of muscle contraction. Alterations in disease	At the end of unit students will be able to understand about muscular system in depth.

<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>V</b>	Describe the Physiology and Mechanism of Respiration Demonstrate Spirometry	<b>The Respiratory System:</b> Functions of Respiratory organs. Physiology of Respiration. Pulmonary ventilation, Volume Mechanics of respiration. Gaseous exchange in lungs. Carriage of Oxygen and carbon dioxide. Exchange of gases in tissues. Regulation of respiration. Alterations in disease.	At the end of unit students will be able to gain knowledge about respiratory system in detail.

<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>VI</b>	Describe Physiology of Digestive system. Demonstrates BMR.	<b>The Digestive System:</b> Functions of organs of digestive tract. Movements of alimentary tract. Digestion in Mouth, stomach, small intestine, large intestine. Absorption of food. Functions of liver, Gall bladder & pancreas	At the end of unit students will be able to understand about digestive system in detail.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>VII</b>	Describe the functions of heart. Demonstrates B.P and pulse monitoring	<b>Circulatory System:</b> Functions of heart, conduction, cardiac cycle, circulation-- Principles, control, factors influencing B.P and pulse Alterations in disease	At the end of unit students will be able to know about circulatory system in depth.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>VIII</b>	Describe the Physiology of excretory system	<b>The Excretory System:</b> Functions of kidneys, ureters, urinary bladder and urethra. Composition of urine. Mechanism of Urine formation. Structure & Functions of skin. Regulation of body temperature. Fluid and electrolyte balance. Alteration in disease	At the end of unit students will be able to understand about excretory system in detail.
<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>IX</b>	Describe the Physiology of Male & Female Reproductive System	<b>The Reproductive System:</b> Spermatogenesis Oogenesis. Function of Female Reproductive Organ. Function of Breast, Placenta, Ovaries. Female sexual cycle. Introduction to Embryology. Functions of the Male Reproductive Organs, Male function in reproduction, Male fertility system.	At the end of unit students will be able to know about reproductive system in detail.

<b>Unit</b>	<b>Learning Objective</b>	<b>Content</b>	<b>Outcome</b>
<b>X</b>	Describe the physiology of Endocrine Glands.	<b>The Endocrine System:</b> Functions of pituitary ,thymus, thyroid, Parathyroid (Calcium Metabolism) Pancreas, Supra renal Glands. Alteration in disease	At the end of unit students will gain knowledge about endocrine glands in detail.
<b>XI</b>	Describe the physiology of reflexes, brain, cranial and spinal nerves. Demonstrate reflex action	<b>Nervous System:</b> Functions of neuroglia and neurons Functions of brain, spinal cord, and cranial and spinal nerves. Cerebrospinal fluid--- composition, circulation and function. Reflex arc, reflex action and reflexes Muscle tone and posture Autonomic functions --- Pain: somatic, visceral and referred Autonomic learning and biofeedback Alterations in disease	At the end of unit students will be able to understand about nervous system in detail.
<b>XII</b>	Describe the physiology of sensory organs.	<b>The Sensory Organs:</b> Functions of skin, eye, ear, nose & tongue. Alterations in disease.	At the end of unit students will be able to know about all sense organs in body & their functions.