

BIO-SCIENCE

Placement- FIRST YEAR

Time: Theory- 120 hours

Anatomy and Physiology-90 hours

Microbiology- 30 hours

ANATOMY AND PHYSIOLOGY

Course Description

This course is designed to help students gain knowledge of the structure and function of the human body and recognize any deviation from normal health in order to render effective nursing services.

General Objective

Upon completion of the course, the student shall be able to:

1. Describe in general the structure and functions of the human body.
2. Describe in detail the structure and functions of the different organs and systems in the human body.
3. Apply the anatomical and physiological principles in the practice of nursing.

Total Hours – 90

Unit No.	Learning Objectives	Content	Hr.	Teaching learning activities	Assessment methods
I	Define and spell various anatomical terms.	Introduction to anatomical terms organization of the human body a) Anatomical terms b) Systems and cavities of the human body	4	Lecture cum Discussions. Explain using charts Record book	Short answer questions Objective type
II.	Describe different organs of the body, systemic function and their inter-relationship.	Introduction to the detailed structure of the body a) The cell: Structure, reproduction and function b) Tissues including membranes and glands : types, structure and functions c) Body cavities and their contents	6	Lecture cum Discussions. Explain using microscopic slides, Skeleton and torso	Short answer questions Objective type
III	Describe the composition of blood and its functions.	Blood a) Composition and formation of blood b) Functions of blood c) Blood clotting, blood grouping and cross matching d) Blood products and their use.	6	Lecture cum Discussions. Explain using microscopic slides	Short answer questions Objective type Essay type

Unit No.	Learning Objectives	Content	Hr.	Teaching learning activities	Assessment methods
				Demonstration of blood grouping and cross-matching, Hb estimation	
IV.	Describe the structure and functions of heart and blood vessels	The Circulatory System a) Heart : Structure, functions including conduction system and cardiac cycle b) Blood vessels : Types, Structure and position c) Circulation of blood d) Blood pressure and pulse	6	Lecture cum discussions. Explain using charts, models and specimen	Short answer questions Objective type Essay type
V.	Describe structure and functions of lymphatic system	The Lymphatic system - Structure and function of lymph vessels, Lymph nodes and lymph circulation, lymphatic tissue - spleen and thymus	6	Lecture cum discussions. Explain using charts and models	Short answer Objective type Essay type
VI.	Describe the structure and functions of respiratory system	The Respiratory system a) The structure and functions of respiratory organs b) The physiology of respiration c) Characteristics of normal respiration and deviation.	6	Lecture cum discussions. Explain using charts and models, specimens Demonstration of spirometry	Short answer Objective type Essay type
VII.	Describe the structure and function of digestive system	The Digestive system a) Structure and functions of the alimentary tract and its accessory organs. b) The process of digestion, absorption and metabolism of food constituents.	6	Lecture cum discussions. Explain using charts, models and videos	Short answer Objective type Essay type
VIII.	Describe the structure and functions of organs of Excretory system.	The Excretory system a) Structure and functions of the kidney, ureters, urinary bladder, and urethra b) Formation and composition of urine. c) Fluid and electrolyte balance d) Structure and functions of the skin. e) Regulation of the body temperature.	6	Lecture cum discussions. Explain using charts, slides models and videos	Short answer Objective type Essay type

Unit No.	Learning Objectives	Content	Hr.	Teaching learning activities	Assessment methods
IX.	Describe the structure and functions of endocrine glands.	The Endocrine system - The structure and functions of the pituitary, thyroid, parathyroid and adrenal glands, pancreas (islets of Langerhans), ovaries and testes	6	Lecture cum discussions. Explain using charts and models	Short answer Objective type Essay type
X.	Describe the structure and functions of male and female reproductive system and accessory organs	The Reproductive system a) Structure and functions of the female reproductive system b) Process of menstrual cycle, reproduction and menopause c) Structure and functions of breasts d) Structure and functions of the male reproductive system e) Reproductive health	8	Lecture cum discussions. Explain using charts, videos, models and specimens	Short answer Objective type Essay type
XI.	Describe the structure and functions of Nervous system.	The nervous system a) Types of nerves- structure and functions b) Brain and cranial nerves. c) Spinal cord and motor and sensory pathways of the spinal cord, autonomic nervous system.	10	Lecture cum discussions. Explain using charts and models	Short answer Objective type Essay type
XII.	Describe the structure and function of sensory organs	The sense organs a) Skin, eye, ear, nose and tongue b) Physiology of vision, hearing, smell, touch, taste and equilibrium.	6	Lecture cum discussions. Explain using charts, videos and models	Short answer Objective type Essay type
XIII.	Describe the structure and functions of skeletal system.	The Skeleton a) Formation and growth of bones b) Tendons, ligaments and cartilages c) Classification of bones, joints d) Joint movement e) Axial and appendicular skeleton	8	Lecture cum discussions. Explain using charts, models and skeleton	Short answer Objective type Essay type
XIV	Describe structure and functions of Muscular system.	The Muscular System a) Type, structure and functions of muscle b) Origin, Insertion, and action of muscles	6	Lecture cum discussions. Explain using charts, slides and models	Short answer Objective type Essay type