SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar, Gujarat
Syllabus with effect from the Academic Year 2021-2022

Bachelor of Science in Nursing (B.Sc. Nursing) (Semester-I)

Course Code	UM01CAAP02	Title of the Course	**APPLIED ANATOMY**
Total Credits of the Course	**03**	Contact Credit Hours	**60**

Course Objectives	1. Describe anatomical terms. 2. Explain the general and microscopic structure of each system of the body. 3. Identify relative positions of the major body organs as well as their general anatomic locations. 4. Explore the effect of alterations in structure. 5. Apply knowledge of anatomic structures to analyze clinical situations and therapeutic applications.

Unit	Time (Hrs)	Content	Weightage
I	8 (T)	**Introduction to anatomical terms and organization of the human body** • Introduction to anatomical terms relative to position – anterior, ventral, posterior dorsal, superior, inferior, median, lateral, proximal, distal, superficial, deep, prone, supine, palmar and plantar • Anatomical planes (axial/ transverse/ horizontal, sagittal/vertical plane and coronal/frontal/oblique plane) • Movements (flexion, extension, abduction,adduction, medial rotation, lateral rotation, inversion, eversion, supination, pronation, plantar flexion, dorsal flexion and circumduction • Cell structure, Cell division • Tissue – definition, types, characteristics, classification, location • Membrane, glands – classification and structure • Identify major surface and bony landmarks in each body region, Organization of human body • Hyaline, fibro cartilage, elastic cartilage • Features of skeletal, smooth and cardiac muscle • Application and implication in nursing	**13%**
II	6 (T)	**The Respiratory system** • Structure of the organs of respiration • Muscles of respiration • Application and implication in nursing	**10%**
III	6 (T)	**The Digestive system** • Structure of alimentary canal and accessory organs of digestion • Application and implications in nursing	**10%**
IV	6 (T)	**The Circulatory and Lymphatic system** • Structure of blood components, blood vessels– Arterial and Venous system • Position of heart relative to the associated structures • Chambers of heart, layers of heart • Heart valves, coronary arteries • Nerve and blood supply to heart • Lymphatic tissue • Veins used for IV injections • Application and implication in nursing •	**10%**
Unit	**Time (Hrs)**	**Content**	**Weightage**

V	4 (T)	**The Endocrine system** • Structure of Hypothalamus, Pineal Gland, Pituitary gland, Thyroid, Parathyroid, Thymus, Pancreas and Adrenal glands	**7%**
VI	4 (T)	**The Sensory organs** • Structure of skin, eye, ear, nose and tongue • Application and implications in nursing	**7%**
VII	10 (T)	**The Musculoskeletal system: The Skeletal system** • Anatomical positions • Bones – types, structure, growth and ossification • Axial and appendicular skeleton • Joints – classification, major joints and structure • Application and implications in nursing **The Muscular system** • Types and structure of muscles • Muscle groups – muscles of the head, neck, thorax, abdomen, pelvis, upper limb and lower limbs • Principal muscles – deltoid, biceps, triceps, respiratory, abdominal, pelvic floor, pelvic floor muscles, gluteal muscles and vastus lateralis • Major muscles involved in nursing procedures	**17%**
VIII	5 (T)	**The Renal system** • Structure of kidney, ureters, bladder, urethra • Application and implication in nursing	**8%**
IX	5 (T)	**The Reproductive system** • Structure of male reproductive organs • Structure of female reproductive organs • Structure of breast	**8%**
X	6 (T)	**The Nervous system** • Review Structure of neurons • CNS, ANS and PNS (Central, autonomic and peripheral) • Structure of brain, spinal cord, cranial nerves, spinal nerves, peripheral nerves, functional areas of cerebral cortex • Ventricular system – formation, circulation, and drainage • Application and implication in nursing	**10%**

Teaching/ Learning Activities	• Lecture cum Discussion • Video/Slides • Anatomical Torso • Models • Identifying muscles involved in nursing procedures in lab
Assessment Methods	• Short answer • Objective type • MCQs
Course Outcomes	1. The course is designed to assists student to recall and further acquire the knowledge of the normal structure of human body, 2. Identify alteration in anatomical structure with emphasis on clinical application to practice nursing.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1	University Examination Conducted by Sardar Patel University*	38 Marks

Suggested References:	
1.	Ross and Wilson Anatomy and Physiology in Health and Illness, International Edition
2.	Tortora's Principles of Anatomy and Physiology
3.	Roger Watson, Anatomy and Physiology for Nurses
4.	PR Ashalatha, Textbook of Anatomy and Physiology for Nurses
5.	Inderbir Singh, Anatomy And Physiology for Nurses
6.	BD Chaurasias Handbook Of General Anatomy

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Syllabus with effect from the Academic Year 2021-2022

Bachelor of Science in Nursing (B.Sc. Nursing) (Semester-I)

Course Code	UM01CAAP02	Title of the Course	**APPLIED PHYSIOLOGY**
Total Credits of the Course	**03**	Contact Credit Hours	**60**

Course Objectives	1. Develop understanding of the normal functioning of various organ systems of the body. 2. Identify the relative contribution of each organ system towards maintenance of homeostasis. 3. Describe the effect of alterations in functions. 4. Apply knowledge of physiological basis to analyze clinical situations and therapeutic applications

Unit	Time (Hrs)	Content	Weightage
I	4 (T)	**General Physiology – Basic concepts** • Cell physiology including transportation across cell membrane • Body fluid compartments, Distribution of total body fluid, intracellular and extracellular compartments, major electrolytes and maintenance of homeostasis. • Cell cycle • Tissue – formation, repair • Membranes and glands – functions • Application and implication in nursing	**7%**
II	6 (T)	**Respiratory system** • Functions of respiratory organs • Physiology of respiration • Pulmonary circulation – functional features • Pulmonary ventilation, exchange of gases Carriage of oxygen and carbon-dioxide • Exchange of gases in tissue • Regulation of respiration • Hypoxia, cyanosis, dyspnea, periodic breathing • Respiratory changes during exercise • Application and implication in nursing	**10%**
III	8 (T)	**Digestive system** • Functions of the organs of digestive tract • Saliva – composition, regulation of secretion and functions of saliva • Composition and function of gastric juice, mechanism and regulation of gastric secretion • Composition of pancreatic juice, function, regulation of pancreatic secretion • Functions of liver, gall bladder and pancreas • Composition of bile and function • Secretion and function of small and large intestine • Movements of alimentary tract • Digestion in mouth, stomach, small intestine, large intestine, absorption of food, Application and implications in nursing	**13%**
Unit	**Time**	**Content**	**Weightage**

	(Hrs)		
IV	6 (T)	**Circulatory and Lymphatic system** • Functions of heart, conduction system, cardiac cycle, Stroke volume and cardiac output • Blood pressure and Pulse • Circulation – principles, factors influencing blood pressure, pulse • Coronary circulation, Pulmonary and systemic circulation • Heart rate – regulation of heart rat • Normal value and variations • Cardiovascular homeostasis in exercise and posture • Application and implication in nursing	**10%**
V	5 (T)	**Blood** • Blood – Functions, Physical characteristics • Formation of blood cells Erythropoiesis – Functions of RBC, RBC life cycle • WBC – types, functions • Platelets – Function and production of platelets • Clotting mechanism of blood, clotting time, bleeding time, PTT • Hemostasis – role of vasoconstriction, platelet plug formation in hemostasis, coagulation factors, intrinsic and extrinsic pathways ofcoagulation • Blood groups and type • Functions of reticuloendothelial system, immunity • Application in nursing	**8%**
VI	5 (T)	**The Endocrine system** • Functions and hormones of Pineal Gland, Pituitary gland, Thyroid, Parathyroid, Thymus, Pancreas and Adrenal glands. • Other hormones • Alterations in disease • Application and implication in nursing	**8%**
VII	4 (T)	**The Sensory Organs** • Functions of skin • Vision, hearing, taste and smell • Errors of refraction, aging changes • Application and implications in nursing	**7%**
VIII	6 (T)	**Musculoskeletal system** • Bones – Functions, movements of bones of axial and appendicular skeleton, Bone healing • Joints and joint movements • Alteration of joint disease • Properties and Functions of skeletal muscles – mechanism of muscle contraction • Structure and properties of cardiac muscles and smooth muscles • Application and implication in nursing	**10%**
IX	4 (T)	**Renal system** • Functions of kidney in maintaining homeostasis • GFR • Functions of ureters, bladder and urethra • Micturition • Regulation of renal function • Application and implication in nursing	**7%**
Unit	**Time**	**Content**	**Weightage**

	(Hrs)		
X	4 (T)	**The Reproductive system** • Female reproductive system – Menstrual cycle, function and hormones of ovary, oogenesis, fertilization, implantation, Functions of breast • Male reproductive system – Spermatogenesis, hormones and its functions, semen • Application and implication in providing nursing care	**7%**
XI	8 (T)	**Nervous system** • Overview of nervous system • Review of types, structure and functions of neurons • Nerve impulse • Review functions of Brain-Medulla, Pons, Cerebrum, Cerebellum • Sensory and Motor Nervous system • Peripheral Nervous system • Autonomic Nervous system • Limbic system and higher mental Functions-Hippocampus, Thalamus, Hypothalamus • Vestibular apparatus • Functions of cranial nerves • Autonomic functions • Physiology of Pain-somatic, visceral and Referred • Reflexes • CSF formation, composition, circulation of CSF, blood brain barrier and blood CSF barrier • Application and implication in nursing	**13%**

Teaching/ Learning Activities	• Lecture cum Discussion • Video/Slides • Anatomical Torso • Models • Explain using charts • Video demonstrations
Assessment Methods	• Short answer • Objective type • MCQs
Course Outcomes	1. The course is designed to assists student to acquire comprehensive knowledge of the normal functions of the organ systems of the human body to facilitate understanding of physiological basis of health, 2. Identify alteration in functions and provide the student with the necessary physiological knowledge to practice nursing.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1	University Examination Conducted by Sardar Patel University*	37 Marks

Suggested References:	
7.	Ross and Wilson Anatomy and Physiology in Health and Illness, International Edition
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