



Unit. No.	Topic	Total Hours (60 hours)	Weight (%)
1	Introduction to human body - Cellular and tissue level of organization. - Definition and scope of anatomy, physiology and pathophysiology. Levels of structural organization and body systems, basic life processes, homeostasis, basic anatomical terminologies.		

	- Structure and functions of cell, transport across cell membrane, cell division, cell junctions. General principles of cell communication, forms of intracellular signalling- - Contact-dependent, b) Paracrine, c) Synaptic, d) Endocrine Classification of tissues, structure, location and functions of epithelial, muscular and nervous and connective tissues. Basic principles of cell injury and adaptation - Components and types of feedback systems, causes of cellular injury, pathogenesis (cell membrane damage, mitochondrial damage, ribosome damage and nuclear damage), morphology of cell injury – adaptive changes (atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia), cell swelling, intra cellular accumulation and cell death. - Definitions of commonly used relevant medical terminologies.	12	20
2	Integumentary system and wound healing - Structure and functions of skin. Skin disorders: Psoriasis and dermatitis and pathophysiology of Leprosy. Basic principles of wound healing. Skeletal system and joints - Divisions of skeletal system, types of bones, salient features and functions of bones of axial and appendicular skeletal system. - Organization of skeletal muscle, physiology of muscle contraction, neuromuscular junction. Structural and functional classification of joints. Diseases of bones and joints - Pathophysiology of rheumatoid arthritis, osteoporosis and gout.	12	20
3	Body fluids, blood and lymphatic system - Body fluids, composition and functions of blood, hemopoiesis, formation of haemoglobin, mechanisms of coagulation, blood grouping, Rh factors and transfusion. - Lymphatic organs and tissues, lymphatic vessels, lymph formation, circulation and functions of lymphatic system. Basic mechanism of inflammation and repair - Introduction, classification and pathophysiology of inflammation, mediators of inflammation. Haematological diseases - Pathophysiology of iron deficiency, megaloblastic anaemia (Vit B12 and folic acid), sickle cell anaemia, Thalassemia, hereditary acquired anaemia and haemophilia.	12	20
4	Peripheral nervous system - Classification of peripheral nervous system: structure and functions of sympathetic and parasympathetic nervous system. Origin and functions of spinal and cranial nerves. Special senses - Structure and functions of eye, ear, nose and tongue. Pathophysiology of special sense disorders- glaucoma, cataract, myopia, otitis externa, - otitis media, vertigo and anosmia	12	20
5	Cardiovascular system Anatomy of heart, blood circulation, blood vessels, structure and	12	20

	functions of artery, vein and capillaries, elements of conduction system of heart and heartbeat, its regulation by autonomic nervous system, cardiac output, cardiac cycle. Regulation of blood pressure, pulse, electrocardiogram. • Pathophysiology of hypertension, cardiac arrhythmias, congestive heart failure, ischemic heart disease (angina, myocardial infarction, atherosclerosis and coronary artery disease).		
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References:

1. Sembulingam, K. and Sembulingam, P., *Essentials of Medical Physiology*. Jaypee Brothers Medical Publishers, New Delhi.
2. Guyton, A.C. and Hall, J.E., *Textbook of Medical Physiology*. Elsevier Saunders, Philadelphia, USA.
3. Tortora, G.J. and Grabowski, S.R., *Principles of Anatomy and Physiology*. Wiley, Palmetto, GA, USA.
4. Kumar, V., Cotran, R.S. and Robbins, S.L., *Basic Pathology*. W.B. Saunders Company, Philadelphia.

List of Open Source Software/learning website: Nil