

PG DMLT Semester I
Subject Name: Human Anatomy and Physiology (HAP)
Subject Code: 02ML0104

Objective: To impart fundamental knowledge of the anatomical and physiological architecture of the human body.

Credits Earned: 4 Credits

Course Outcomes: After the completion of the course:

1. Students will gain knowledge regarding the basic concepts of cellular physiology.
2. Students will be able to distinguish and differentiate between the structure and function of various tissues of the human body.
3. Students will gain insights into the structure and inner workings of the nervous and respiratory system.
4. Students will become well versed with the structure and function of the lymphatic and circulatory system.

Pre-requisite of course: Fundamental knowledge of organ system of human body.

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	IA (M)	CSE (I)	Viva (V)	Practical/ TW	
4	0	0	4	50	30	20	0	0	100

Contents:

Unit	Topics	Contact Hours
1	Human Cell, Tissue and Skeletal System Scope of anatomy and physiology and basic terminology used in these subjects. Structure of cell and its components and their functions and cell division in humans. Elementary Tissues of the Human body: epithelial connective, muscular and nervous tissues, their sub-types, movements of joints and skeletal system.	15
2	Nervous and Respiratory System <i>Respiratory System:</i> Nasal cavity, Paranasal sinuses, Naso-Pharynx, Larynx, Trachea and Chief Bronchi, the Lung, Mechanism of breathing. <i>Nervous System:</i> Components, parts of Nervous System, Brain, meninges, Nerve terminals, Motor and sensory pathways, Cranial Nerves, Spinal cord & their Blood Supply.	15
3	Endocrine System, Digestive System and Urinary System <i>Endocrine System:</i> The Endocrine glands and their functions, Regulation of endocrine secretion and effect of hyper and hyposecretion of endocrine glands. The suprarenal gland, the pineal body, thymus gland, pancreas, sex glands. <i>Digestive System:</i> Gastrointestinal tract and associated glands. Function of intestine. The process of digestion and absorption, the Liver, the functions of liver, the extra hepatic passage. <i>Urinary System:</i> The kidney, the Renal Pelvis, Ureter and urinary bladder, the urethra, Physiological process involved in excretion. Nephrons, mechanism of urine formation osmoregulation by kidney.	15
4	Lymphatic and Circulatory System Lymph and Lymphatic system: compositions and formulation and circulation of Lymph: Basic physiology and functions of the spleen. Cardiovascular system: Basic anatomy of the heart, physiology of the heart, blood vessels and circulation, Basic understanding of the cardiac cycle, heart sounds and electrocardiogram. Blood pressure and its regulation.	15
	Total Hours	60



References:

1. Textbook of Medical Laboratory Technology by Praful B. Godkar
2. Medical laboratory Technology by KL Mukherjee Volume-I
3. Haematology for students Practitioners by Ramnik Sood
4. Handbook of Medical Laboratory Technology (IInd edition) by V.H. Talib
5. Haematology (International edition) Emmanuel C.Besa Harwal Publisher
6. Practical Haematology by JB Dacie
7. Practical Haematology (8th edition) by Sir John 8. Clinical Haematology by Christopher A. Ludlam

Suggested Theory distribution:

The suggested theory distribution as per Bloom’s taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
30%	25%	25%	15%	5%	0%

Instructional Method:

- a. The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to the conventional teaching method by the blackboard, may also use any of tools such as demonstration, role play, Quiz, brainstorming, etc.
- b. The internal evaluation will be done based on continuous evaluation of students in the classroom in the form of attendance, assignments, verbal interactions etc.
- c. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.