

Subject Code: 201T	Subject Title: Human Anatomy and Physiology-II (Theory)
Pre-requisite: --	

Course Objective: Upon completion of this course, the students would be able to

1. Explain the gross morphology, structure and functions of various organs of the human body.
2. Describe the various homeostatic mechanisms and their imbalances.
3. Identify the various tissues and organs of different systems of the human body.
4. Perform hematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc. and record blood pressure, heart rate, pulse and respiratory volume.
5. Appreciate coordinated working pattern of different organs of each system.
6. Appreciate the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body.

Teaching Scheme (Hours per week)			Evaluation Scheme (Marks)			
Lecture	Tutorial	Credit	Theory			Total
			University Assessment	Continuous Assessment	Internal Assessment	
3	1	4	75	10	15	100

Detailed Syllabus:

Sr. No.	UNIT	Hours	Weightage (%)
1.	Nervous system Organization of nervous system, neuron, neuroglia, classification and properties of nerve fibre, electrophysiology, action potential, nerve impulse, receptors, synapse, neurotransmitters. Central nervous system: Meninges, ventricles of brain and cerebrospinal fluid. Structure and functions of brain (cerebrum, brain stem, cerebellum), spinal cord (gross structure, functions of afferent and efferent nerve tracts, reflex activity)	10 Hours	22.22%
2.	Digestive system Anatomy of GI Tract with special reference to anatomy	06 Hours	13.33%

	<p>and functions of stomach, (Acid production in the stomach, regulation of acid production through parasympathetic nervous system, pepsin role in protein digestion) small intestine and large intestine, anatomy and functions of salivary glands, pancreas and liver, movements of GIT, digestion and absorption of nutrients and disorders of GIT.</p> <p>Energetics: Formation and role of ATP, Creatinine Phosphate and BMR.</p>		
3.	<p>Respiratory system Anatomy of respiratory system with special reference to anatomy of lungs, mechanism of respiration, regulation of respiration. Lung Volumes and capacities transport of respiratory gases, artificial respiration, and resuscitation methods.</p> <p>Urinary system Anatomy of urinary tract with special reference to anatomy of kidney and nephrons, functions of kidney and urinary tract, physiology of urine formation, micturition reflex and role of kidneys in acid base balance, role of RAS in kidney and disorders of kidney.</p>	10 Hours	22.22%
4.	<p>Endocrine system Classification of hormones, mechanism of hormone action, structure and functions of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas, pineal gland, thymus and their disorders.</p>	10 Hours	22.22%
5.	<p>Reproductive system Anatomy of male and female reproductive system, Functions of male and female reproductive system, sex hormones, physiology of menstruation, fertilization, spermatogenesis, oogenesis, pregnancy and parturition</p> <p>Introduction to genetics Chromosomes, genes and DNA, protein synthesis, genetic pattern of inheritance</p>	9 Hours	20%

Subject Code: 201P	Subject Title: Human Anatomy and Physiology-II (Practical)
Pre-requisite: --	

Course Objective: Upon completion of this course the student should be able to

1. Summarize functional characteristics of various systems.
2. Describe the fundamental physiological mechanism involved in demonstrated practical.
3. Interlinking various systems in terms of feedback mechanisms and performing various tests related to blood cells counts which relate with the diagnosis of various disease conditions.
4. Identify and describe functionality of various devices for family planning and Pregnancy diagnostic tests.
5. Analyze the problem, communicate suggested solution and interpret the results.

Teaching Scheme (Hours per week)		Evaluation Scheme (Marks)			
Practical	Credit	Theory			Total
		University Assessment	Continuous Assessment	Internal Assessment	
4	2	35	5	10	50

List of practical:

Sr. No.	Title of the Practical
1	To study the integumentary and special senses using specimen, models, etc.,
2	To study the nervous system using specimen, models, etc.,
3	To study the endocrine system using specimen, models, etc
4	To demonstrate the general neurological examination
5	To demonstrate the function of olfactory nerve
6	To examine the different types of taste.
7	To demonstrate the visual acuity
8	To demonstrate the reflex activity
9	Recording of body temperature

10	To demonstrate positive and negative feedback mechanism.
11	Determination of tidal volume and vital capacity.
12	Study of digestive, respiratory, cardiovascular systems, urinary and reproductive systems with the help of models, charts and specimens.
13	Recording of basal mass index
14	Study of family planning devices and pregnancy diagnosis test.
15	Demonstration of total blood count by cell analyser
16	Permanent slides of vital organs and gonads.

Recommended Study Material:

1. Essentials of Medical Physiology, K. Sembulingam and P. Sembulingam. Jaypee brothers medical publishers, New Delhi.
2. Anatomy and Physiology in Health and Illness, Kathleen J.W. Wilson, Churchill Livingstone, New York
3. Physiological basis of Medical Practice-Best and Taylor. Williams & Wilkins Co, Riverview, MI USA
4. Text book of Medical Physiology- Arthur C, Guyton and John.E. Hall. Miamisburg, OH, U.S.A.
5. Principles of Anatomy and Physiology, Tortora Grabowski. Palmetto, GA, U.S.A.
6. Textbook of Human Histology, Inderbir Singh, Jaypee brothers medical publishers, New Delhi.
7. Textbook of Practical Physiology, C.L. Ghai, Jaypee brothers medical publishers, New Delhi.
8. Practical workbook of Human Physiology, K. Srinageswari and Rajeev Sharma, Jaypee brother's medical publishers, New Delhi.
9. Practical Anatomy and Physiology, Goyal, R. K., Natvar M. P., Shah S. A., B.S. Shah Prakashan, Ahmedabad.
10. Textbook of Anatomy and Physiology, Goyal, R. K., Natvar M. P., Shah S. A., B.S. Shah Prakashan, Ahmedabad.
11. Textbook of Practical Physiology, Rannade VG, PVG Publisher, Pune.
12. Human Anatomy and Physiology, Paul D. Anderson, Jones and Bartlett publisher, London