

Branch Name:	Bachelor of Pharmacy
Program Code:	PH101
Course Name:	Human Anatomy, Physiology and Pathophysiology II (Theory)
Course Code:	1BP203T

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)		
Lecture	Tutorial	Practical	Credit	Theory (T)		Total Marks
				Continuous Assessment	University Assessment	Theory
4	-	NA	4	40	60	100

Course Objectives:

The objectives of this course are to:

1. Understand the anatomy and physiology of major body systems.
2. Learn mechanisms of neurological, gastrointestinal, respiratory, renal, endocrine, and reproductive functions.
3. Identify common pathophysiological conditions affecting each organ system.
4. Correlate structural and functional abnormalities with disease symptoms.
5. Equip students with foundational knowledge for interpreting disease processes and planning rational pharmacotherapy.

Course Outcomes (CO):

CO No.	Upon successful completion of this course, the students will be able to:
1	Describe the structural organization of the nervous, gastrointestinal, respiratory, urinary, endocrine and reproductive systems.
2	Explain the physiological mechanisms that regulate the functions of nervous, endocrine and reproductive systems.
3	Illustrate the etiology and development of common diseases affecting different organ systems including cancer.
4	Analyze the pathophysiological alterations associated with disorders of the nervous, gastrointestinal, respiratory, renal and endocrine systems.
5	Interpret clinical manifestations and case findings related to organ system dysfunctions.

Subject Contents:

Unit. No.	Topic	Total Hours (60 hours)	Weight (%)
1	Nervous System a) Organization of nervous system, neuron, neuroglia, classification and properties of nerve fibre, electrophysiology, action potential, nerve impulse, receptors, synapse and neurotransmitters. Central nervous system: Meninges, ventricles of brain and cerebrospinal fluid. Structure and functions of brain (cerebrum, brain	14	23

	stem and cerebellum), spinal cord (gross structure, functions of afferent and efferent nerve tracts, reflex activity). b) Pathophysiology of epilepsy, Parkinson's disease, stroke, migraine, depression, schizophrenia, Alzheimer's disease and meningitis.		
2	Gastrointestinal System a) Anatomy of GI tract with special reference to anatomy and functions of stomach (acid production in the stomach and its regulation through parasympathetic nervous system; role of pepsin in protein digestion). Anatomy and functions of small intestine and large intestine. Anatomy and functions of salivary glands, pancreas and liver. Movements of GIT, digestion and absorption of nutrients. b) Pathophysiology of inflammatory bowel diseases, peptic ulcer, jaundice, hepatitis, typhoid and alcoholic and nonalcoholic fatty liver disease	12	20
3	a) Respiratory System Anatomy of respiratory system with special reference to anatomy of lungs. Mechanism of respiration and regulation of respiration. Lung volumes and capacities, transport of respiratory gases, artificial respiration and resuscitation methods. b) Pathophysiology of asthma, chronic obstructive pulmonary diseases and tuberculosis. c) 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 Renin Angiotensin Aldosterone System in kidney. Pathophysiology of acute and chronic renal failure and urinary tract infections.	12	20
4	Endocrine System a) Classification of hormones and mechanism of hormone action. Structure and functions of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas, pineal gland and thymus. b) Pathophysiology of diabetes, hypothyroidism, hyperthyroidism, goiter and polycystic ovary syndrome.	10	17
5	Reproductive System and Cancer a) 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. b) Pathophysiology of sexually transmitted diseases: AIDS, syphilis and gonorrhea. Etiology and pathogenesis of cancer.	12	20

References:

1. Wilson, K.J.W., *Ross and Wilson Anatomy and Physiology in Health and Illness*. Churchill Livingstone, New York.
2. Tortora, G.J. and Grabowski, S.R., *Principles of Anatomy and Physiology*. Palmetto, GA, U.S.A.
3. Guyton, A.C. and Hall, J.E., *Textbook of Medical Physiology*. Elsevier.
4. Chatterjee, C.C., *Human Physiology (Vol. I & II)*. Academic Publishers, Kolkata.
5. Mohan, H., *Textbook of Pathology*. Jaypee Publishers.
6. Porth, C.M., *Pathophysiology: Concepts of Altered Health States*. Lippincott Williams & Wilkins.
7. Kumar, V., Abbas, A.K., Aster, J.C. and Deyrup, A.T., *Robbins and Kumar Basic Pathology*. Elsevier.

List of Open Source Software/learning website: Nil