



Faculty of Pharmacy
Bachelor of Pharmacy (B. Pharm.)
(W. E. F.: 2023-24)
Document ID: SUTEPHB-01

Name of Faculty	:	Faculty of Pharmacy
Name of Program	:	Bachelor of Pharmacy
Course Code	:	2BPH01
Course Title	:	Human Anatomy and Physiology II
Type of Course	:	Basic Pharmaceutical Sciences
Year of Introduction	:	2023-24

Prerequisite	:	Zeal to learn the subject
Course Objective	:	This subject is designed to impart fundamental knowledge on the structure and functions of the various systems of the human body. It also helps in understanding both homeostatic mechanisms.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	To remember the anatomical features and organization of nervous system, digestive system, respiratory system, urinary system, endocrine system and reproductive system.
	CO2	To understand the physiological activity of nervous system, digestive system, respiratory system, urinary system, endocrine system and reproductive system.
	CO3	To interpret and analyze the diseases of nervous system, digestive system, respiratory system, urinary system, endocrine system and reproductive system and apply the basic concept of genetics.
	CO4	To understand the diagnostic tests for the disorders of Nervous System, digestive system, Respiratory system, Urinary system, endocrine system and Reproductive system

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	SEE	CIA	SEE	CIA	
03	01	04	06	75	25	35	15	150

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P - Practical, C - Credit, SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with COs
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	22.22 %	CO1 CO2 CO3 CO4
2	Digestive system- Anatomy of GI Tract with special reference to anatomy and functions of stomach, (Acid production in the stomach, regulation of acid production through parasympathetic nervous system, pepsin role in protein digestion) small intestine 54 and large intestine, anatomy and functions of salivary glands, pancreas and liver, movements of GIT, digestion and absorption of nutrients and disorders of GIT. Energetics Formation and role of ATP, Creatinine Phosphate and BMR	6	13.33 %	CO1 CO2 CO3 CO4
3	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. 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.	10	22.22 %	CO1 CO2 CO3 CO4
4	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.	10	22.22 %	CO1 CO2 CO3 CO4

5	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. Introduction to genetics- Chromosomes, genes and DNA, protein synthesis, genetic pattern of inheritance	9	20 %	CO1 CO2 CO3 CO4
---	---	---	------	--------------------------

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	25	50	00	25	00	00

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Suggested List of Experiments/Tutorials

Sr. No.	Name of Experiment/Tutorial	Teaching Hours
1	To study the integumentary and special senses using specimen, models, etc.,	4
2	To study the nervous system using specimen, models, etc.,	4
3	To study the endocrine system using specimen, models, etc	4
4	To demonstrate the general neurological examination	4
5	To demonstrate the function of olfactory nerve	4
6	To examine the different types of taste.	4
7	To demonstrate the visual acuity	4
8	To demonstrate the reflex activity	4
9	Recording of body temperature	4
10	To demonstrate positive and negative feedback mechanism.	4
11	Determination of tidal volume and vital capacity.	4
12	Recording of basal mass index .	4
13	Study of family planning devices and pregnancy diagnosis test. Demonstration of total blood count by cell analyser	4
14	Permanent slides of vital organs and gonads	4
15	Demonstration of total blood count by cell analyser	4

Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	Microscopes
2	Haemocytometer with Micropipettes
3	Sahli's haemocytometer
4	Stethoscope
5	Mercury thermometer

Suggested Learning Websites

Sr. No.	Name of Website
1	https://pci.nic.in/pdf/Syllabus_B_Pharm.pdf
2	https://www.aicte-india.org/downloads/bpharma.pdf
3	https://www.ipc.gov.in/
4	https://www.ayush.gov.in/
5	https://ayudmla.gujarat.gov.in/home.php
6	https://www.fda.gov/
7	https://www.pharmacopoeia.com/
8	https://ipapharma.org/
9	https://gpat.nta.nic.in/
10	https://drnaitiktrivedi.com/
11	https://gdc4gpat.com/course/gpat/
12	https://niscpr.res.in/
13	https://delnet.in/
14	https://ihubgujarat.in/
15	https://www.ssipgujarat.in/

Reference Books

Sr. No.	Name of Reference Books
1	Essentials of Medical Physiology by K. Sembulingam and P. Sembulingam. Jaypee brothers medical publishers, New Delhi.
2	Anatomy and Physiology in Health and Illness by Kathleen J.W. Wilson, Churchill Livingstone, New York
3	Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co,Riverview,MI USA
4	Text book of Medical Physiology- Arthur C,Guyton andJohn.E. Hall. Miamisburg, OH, U.S.A.
5	Principles of Anatomy and Physiology by Tortora Grabowski. Palmetto, GA, U.S.A.
6	Textbook of Human Histology by Inderbir Singh, Jaypee brothers medical publishers, New Delhi.



Faculty of Pharmacy
Bachelor of Pharmacy (B. Pharm.)
(W. E. F.: 2023-24)
Document ID: SUTEFPHB-01

7	Textbook of Practical Physiology by C.L. Ghai, Jaypee brothers medical publishers, New Delhi.
8	Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co, Riverview, MI USA
9	Text book of Medical Physiology- Arthur C, Guyton and John. E. Hall. Miamisburg, OH, U.S.A.
10	Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co, Riverview, MI USA