INSTITUTE	**FACULTY OF PHARMACY**
PROGRAM	**BACHELOR OF PHARMACY**
SEMESTER	**1**
COURSE TITLE	**HUMAN ANATOMY, PHYSIOLOGY AND PATHOPHYSIOLOGY I**
COURSE CODE	**13PH0109P**
COURSE CREDITS	**1**

Objective:

1 Provide fundamental knowledge of the structure and functions of various organ systems of the human body.

2 Understand the mechanisms of homeostasis and their role in maintaining normal physiological functions.

3 Introduce the basic concepts of pathophysiology and the causes of diseases affecting different organ systems.

4 Explain the body's physiological responses to disease-producing agents.

5 Lay the foundation for understanding clinical conditions through the study of functional alterations in organs and systems.

Course Outcomes: After completion of this course, student will be able to:

1 Explain the principles, applications, and experimental use of microscopy techniques, and perform basic laboratory experiments related to the nervous system and special senses

2 Describe the gross morphology, microscopic structure, and coordinated functioning of major human organs and organ systems, emphasizing their roles in maintaining normal physiology

3 Estimate and interpret key hematological parameters, and explain the mechanisms of homeostasis along with related physiological and pathological disorders

4 Discuss the etiology and pathogenesis of selected disease states, linking structural and functional changes to clinical manifestations

5 Identify and explain common diseases with respect to their signs and symptoms, risk factors, diagnostic methods, preventive measures, treatment strategies, and possible complications

Pre-requisite of course:1. Basic knowledge of biology at the higher secondary level. 2. Introductory knowledge of human body functions and life processes. 3. Understanding of units of measurement and simple calculations. 4. Basic communication skills for case discussion and report writing.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	3	0	0	0	30	20

DR. ASHISHKUMAR VRAJLAL KYADA
Digitally signed by (Name of HOD)

DR. LALJI HAKUBHAI BALDANIYA
Digitally signed by (Name of Dean/ Principal)

Contents : Unit	Topics	Contact Hours
Total Hours		

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**(Minimum 12 experiments must be performed) Practical HAPP allows the verification of physiological processes discussed in theory classes through experiments on living tissues, simulated videos, models and charts. 1. Study of compound microscopes.** Practical	3
2	**Microscopic study of epithelial and connective tissue.** Practical	3
3	**Microscopic study of muscular and nervous tissue.** Practical	3
4	**Identification of axial bones.** Practical	3
5	**Identification of appendicular bones.** Practical	3
6	**Introduction to hemocytometry.** Practical	3
7	**Demonstration of total blood count by cell analyser.** Practical	3
8	**Enumeration and interpretation of white blood cell (WBC) count, differential count.** Practical	3
9	**Enumeration and interpretation of total red blood corpuscles (RBC) count.** Practical	3
10	**Determination of bleeding time and clotting time.** Practical	3
11	**Estimation and interpretation of hemoglobin content.** Practical	3
12	**Determination of blood group.** Practical	3
13	**Determination and interpretation of erythrocyte sedimentation rate (ESR).** Practical	3
14	**Determination of pulse rate, heart rate and blood pressure.** Practical	3
15	**Recording and interpretation of ECG.** Practical	3
16	**To study the cardiovascular system and integumentary system.** Practical	3

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
17	**Case studies/files of patients with anaemia, thalassemia, haemophilia, leprosy, gout, hypertension and ischemic heart disease.** Practical	3
Total Hours		**51**

Textbook :

1 Textbook of Medical Physiology, A.C. Guyton, J.E. Hall, Elsevier, 2025
2 Principles of Anatomy and Physiology, Gerard J. Tortora, Bryan Derrickson, Wiley, 2023
3 Anatomy and Physiology in Health and Illness, Kathleen J.W. Wilson, Anne Waugh, Churchill Livingstone, 2023
4 Ross & Wilson Anatomy and Physiology in Health and Illness, Waugh & Grant, Elsevier, 2022
5 Essentials of Human Anatomy and Physiology, Elaine N. Marieb, Pearson, 2024

References:

1 Gray's Anatomy for Students, Gray's Anatomy for Students, Drake, Vogl, Mitchell, Elsevier, 2024
2 Ganong's Review of Medical Physiology, Ganong's Review of Medical Physiology, Kim E. Barrett et al., McGraw-Hill, 2022
3 Wheater's Functional Histology, Wheater's Functional Histology, Young, O'Dowd, Woodford, Elsevier, 2023
4 Robbins Basic Pathology, Robbins Basic Pathology, Kumar, Abbas, Aster, Elsevier, 2023
5 Clinical Anatomy by Regions, Clinical Anatomy by Regions, Richard S. Snell, Wolters Kluwer, 2019

Suggested Theory Distribution:

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

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
18.00	26.00	28.00	16.00	8.00	4.00

Instructional Method:

1 Demonstration of instruments and physiological experiments
2 Microscopy-based learning
3 Simulation using videos and models
4 Viva voce and oral assessment

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Instructional Method:

5 Chart/model-based teaching

6 Reflective learning through patient case files

Supplementary Resources:

1 National Institutes of Health (NIH): https://www.nih.gov

2 World Health Organization: https://www.who.int

3 MedlinePlus Anatomy Resources: https://medlineplus.gov

4 Centers for Disease Control and Prevention: https://www.cdc.gov

5 National Health Mission India: https://nhm.gov.in