Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari Pharmacy College
Semester-1(B.Pharm.)

Subject: Human Anatomy and Physiology-I (BPHBP11301)

Type of course: Major

Prerequisite: NA

Rationale: The course focuses on anatomical terminology, anatomical identification, and physiological processes of human body systems. Students enrolled in this course should realize that this course requires an extensive amount of time, effort, reading, and memorization.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks	CA	
CI	T	P	C	ESE	MSE	VP	ALA	
3	1	4	6	75	25	35	15	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Continuous Assessment:

(For each activity maximum-minimum range is 5 to 10 marks)

Sr. No	Active Learning Activities	Marks
1.	**Identification and Functioning of Organs:** Faculty will provide name of Organ, Tissue and Bone (Two sample) students have to identify and write their functions and upload on moodle.	5
2.	**Think – Pair – Share(Bone, tissues pairing)** Faculty will provide name of different bones (two) students have to identify and pair them with location in the body and sketch it and upload on moodle.	5
3.	**Drawing and labeling:** Faculty will provide name of system and instrument (one) students have to draw neat and clean diagram of it and labelled it upload on moodle.	5
Total		15

Course Content:

Sr. No	Course content	Hrs	% Weightage
1	**Introduction to human body** Definition and scope of anatomy and physiology, levels of structural organization and body systems, basic life processes, homeostasis, basic anatomical terminology. **Cellular level of organization** Structure and functions of cell, transport across cell membrane, cell division, cell junctions. General principles of cell communication, intracellular signaling pathway activation by extracellular signal molecule, Forms of intracellular signaling: a) Contact-dependent b) Paracrine c) Synaptic d) Endocrine **Tissue level of organization** Classification of tissues, structure, location and functions of epithelial, muscular and nervous and connective tissues.	10	23
2	**Integumentary system** Structure and functions of skin. **Skeletal system:** Divisions of skeletal system, types of bone, salient features and functions of bones of axial and appendicular skeletal system Organization of skeletal muscle, physiology of muscle contraction, neuromuscular junction , Joints Structural and functional classification, types of joints movements of its.	10	23
3	**Body fluids and blood** Body fluids, composition and functions of blood, hemopoeisis, formation of hemoglobin, anemia, mechanisms of coagulation, blood grouping, Rh factors, transfusion, its significance and disorders of blood, Reticuloendothelial system. **Lymphatic system** Lymphatic organs and tissues, lymphatic vessels, lymph circulation and functions of lymphatic system	10	23
4	**Peripheral nervous system:** Classification of peripheral nervous system: Structure and functions of sympathetic and parasympathetic nervous system. Origin and functions of spinal and cranial nerves. **Special senses:** Structure and functions of eye, ear, nose and tongue and their disorders.	08	18

5	**Cardiovascular system** Heart – anatomy of heart, blood circulation, blood vessels, structure and functions of artery, vein and capillaries, elements of conduction system of heart and heart beat, its regulation by autonomic nervous system, cardiac output, cardiac cycle. Regulation of blood pressure, pulse, electrocardiogram and disorders of heart.	07	13

Suggested Specification table with Marks (Theory):75

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	30%	40 %	20%	05%	05 %	

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

Course Outcome:

After learning the course the students should be able to:	
CO1	Identify the gross morphology, structure and functions of cell, skeletal, muscular, cardiovascular system of the human body
CO2	Understand the various homeostatic mechanisms and their imbalances
CO3	Identify the different types of bones in human body
CO4	Analyse the various tissues of different systems of human body
CO5	Analyse the Cardiovascular system.

List of Practical

(Minimum-10 practical):

Sr. No	Descriptions	Unit No	Hrs
1.	Study of compound microscope	1	4
2.	Microscopic study of epithelial and connective tissue	1	4
3.	Microscopic study of muscular and nervous tissue	1	4
4.	Identification of axial bones	2	4
5.	Identification of appendicular bones	2	4
6.	Introduction to hemocytometry.	2	4
7.	Enumeration of white blood cell (WBC) count	3	4
8.	Enumeration of total red blood corpuscles (RBC) count	3	4
9.	Determination of bleeding time	3	4
10.	Determination of clotting time	3	4
11.	Estimation of hemoglobin content	3	4
12.	Determination of blood group.	3	4
13.	Determination of erythrocyte sedimentation rate (ESR).	3	4
14.	Determination of heart rate and pulse rate.	4	4
15.	Recording of blood pressure.	4	4
		Total	60

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

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, MIUSA
4. Text book of Medical Physiology- Arthur C, Guyton and John. E. Hall. Miamisburg, OH, U.S.A.
5. Principles of Anatomy and Physiology by Tortora Grabowski. Palmetto, GA, U.S.A.
6. Chaurasia B D, Human Anatomy, Regional & Applied. Part I, II & III, CBS Publishers and Distributors, New Delhi.
7. Kulkarni S.K., Handbook of Experimentals Pharmacology, Vallabh Prakashan Delhi.