

Branch Name:	B.Sc (MLT/ RIT/ AT/ CCT)
Program Code:	AS101/ AS102/ AS103/ AS104
CourseTitle:	Human Physiology-I
Course Code:	1AS1000102
Pre-requisite Course:	

CourseObjectives:

A physiology course aims to equip students with a foundational understanding of how the human body functions, both in health and disease, encompassing organ systems, homeostasis, and the interplay between different physiological processes.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	-	2	4	50	50	25	25	150

Course Contents:

THEORY SYLLABUS

Unit No	Theory Topic	Total Hours	Weightage (%)
I	<u>GENERAL/CELL PHYSIOLOGY:</u> - Describe the structure and functions of cell - Describe the functions of the cell organelles - Describe briefly the types of transport across cell membrane and carrier systems	05	10%
II	<u>BLOOD PHYSIOLOGY & IMMUNOLOGY:</u> - Describe the normal composition of human blood and its functions - Describe the normal plasma proteins & their functions - Describe the structure and functions of RBC and hemoglobin - Describe the process of Erythropoiesis - Describe the Structure, production, & functions of WBCs - Describe the structure, production & functions of Platelets - Describe the Types of blood groups and their importance, - Describe the Mechanism of coagulation - Define immunity and describe the types of immunity - Classify antigen & antibodies - Describe Tcell immunity & Bcell immunity	12	27%
III	<u>NERVE & MUSCLE PHYSIOLOGY INCLUDING ANS:</u> - Describe the physiological structure of musclet issue and its types - Describe the parts of neuron and their functions, and the synapse and its function - Describe the action potential, its basis, refractory period, latent period, etc. and neuro muscular transmission - Describe briefly the autonomic nervous system and the functions and	08	18%

	Effects of the sympathetic and para sympathetic nervous systems		
IV	<u>GASTRO INTESTINAL PHYSIOLOGY:</u> 1. Describe briefly the Physiological anatomy of G.I.T and its functions. 2. Describe briefly the composition and functions of Saliva 3. Describe briefly the physiological anatomy of the stomach and the 12 composition, functions of gastric juice. 4. Describe briefly the functions of pancreas, and the composition & functions of pancreatic juice. 5. Describe briefly the functions of liver and gall bladder and the Composition, and functions of bile juice.	08	18%
V	<u>RESPIRATORY PHYSIOLOGY:</u> 1. Describe the physiological structure and functions of Respiratory tract. 2. Describe the Mechanics of respiration and its regulation 3. Describe the Fundamentals of oxygen and CO₂ transport in blood 4. Describe the lung volumes, spirometry & their importance	12	27%

PRACTICAL SYLLABUS

Unit No	Practical Topic	Total Hours	Weightage (%)
I	Perform RBC count of given blood sample	04	13%
II	Perform WBC count of given blood sample	04	13%
III	Performa Differential WBC count of the given blood sample	05	18%
IV	Estimate Hemoglobin in given blood sample	04	13%
V	Determine Blood Group of given blood sample	04	13%
VI	Estimate Bleeding Time & Clotting Time of given blood sample	04	13%
VII	Amphibian Nerve Muscle Charts	05	17%

Text Books/Reference Books:

1. Human Physiology for BDS, by A K Jain, 7th edition
2. Essentials of Physiology for Dental Students by K Sembulingam, 3rd edition
3. Human Physiology in Nutshell, by A K Jain, 4th edition
4. Manual for Practical Physiology for BDS, by A K Jain, 5th edition

Course Learning Outcomes (CLO):

Course Outcomes	Description	Bloom's Taxonomy Level
COL1	Explain the concepts of calculus. Use the concepts of calculus to determine the power series expansion of functions and evaluation of limits.	Understanding(2) Applying(3)
COL2	Use the concepts partial derivatives to solve the differential equations Appearing in Engineering fields.	Applying(3)
COL3	Use the concept of Reduction formula to find surface areas and volumes of revolution.	Applying(3)
COL4	Solve improper integrals with the help of beta and gamma functions	Applying(3)
COL5	Use the concept of double integration to solve area and volume of surfaces.	Applying(3)