

Programme	BS Biochemistry	Course Code	BC. 303	Credit Hours	3
Course Title	Human Physiology				
Course Introduction					
Physiology deals with the integration of the different dynamic system that keep the life ticking. Organization of the various system, and the way they interact is critical to our understanding of how the entire body works, responds to changing internal and external conditions, and fulfils a function. This course is heavily concerned with the basic concepts of structural and functional organization of the human body, the terminology involved in the areas of physiology and anatomy, and the understanding of the different anatomo-physiological systems.					
Learning Outcomes					
On the completion of the course student will be able:					
<ul style="list-style-type: none">• Understand physiology of human along with structure and functions of various organs (normal vs disease conditions)• Explain the interplay between different organ systems and how organs and cells interact to maintain biological homeostasis.• Developing skills to solve case studies and physiologically-relevant problems.					
Course Content					
<ul style="list-style-type: none">• Introduction and Functions to Human Physiology: Levels of Organization in the Body, Cell functions• Homeostasis, factors for regulation and maintenance of processes in the human body• Blood: General composition, characteristics and functions, Blood coagulation and blood clotting factors• Membrane potential, Action Potential, Nerves, and Reflexes• Nervous system: Organization, Types of nervous system, Afferent and Efferent Division• Special Senses. Receptor physiology• Introduction to Endocrine system, Central Endocrine System, Pineal gland, Circadian cycles, Hypothalamus and Pituitary Gland• Peripheral Endocrine System, Thyroid gland hormones, Adrenal gland hormones, and Pancreatic hormones and functions• Gastro-intestinal tract: Organization, and functions, Nutrition and Physiology of digestion, movement of the food to the alimentary canal• Digestion and Absorption of Macromolecules: Digestion, absorption and transport of carbohydrates, lipids and Proteins• Respiratory system: pulmonary ventilation, physical principles of gaseous exchange, transport of oxygen and carbon dioxide in the blood and body fluid• Obstructive and restrictive lung diseases, regulation of respiration• Urinary system: formation of urine by kidney, glomerular filtration, tubular function and regulation of acid-base balance,• Counter current multiplication, Renin Angiotensin Aldosterone System, regulation of blood pressure and volume• Muscle Physiology, Structure and function of skeletal muscles, smooth muscles and cardiac muscles• Endocrinology and Reproduction, male and female reproductive systems and their hormones.					

Textbooks and Reading Material			
<ul style="list-style-type: none"> Sherwood L, Brooks Cole W. B Saunders Company(2015). Human Physiology: From Cells to Systems 9th Edition Guyton A.C., John E.H (2016). Text Book of Medical Physiology 13th Edition. Silverthorn D.U, Pearson (2018) Human Physiology: An Integrated Approach 8th Edition. Fox S. I, McGraw-Hill Education (2015) Human Physiology 14th Edition. 			
Teaching Learning Strategies			
<ul style="list-style-type: none"> Lecture presentations Quizzes Written Assignment Class activities and discussions 			
Assignments: Types and Number with Calendar			
<ul style="list-style-type: none"> 1st Quiz in 4th Week of 5 marks 2nd Quiz in 10th Week of 5 marks 3rd Quiz in 14th Week of 5 marks Assignment in 8th Week of 10 marks 			
Assessment			
Sr. No.	Elements	Weightage	Details
1	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.