

Programme	B.Sc. Zoology Honours				
Type of Course	Major				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total hours
	4	3		2	75
Pre-requisites	+2 /VHSC Biology or the following online courses 1. https://www.coursera.org/learn/physiology 2. https://learn.utoronto.ca/programs-courses/courses/2159-basic-human-physiology 3. https://www.classcentral.com/classroom/youtube-anatomy-physiology-45834 4. https://www.ivyroses.com/Revise/AnatomyPhysiology/index.php 5. https://www.medicalnewstoday.com/articles/organs-in-the-body#organ-systems 6. https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture_notes/health_science_students/physiologypti.pdf				
Course objectives	The student develops understanding in the organization and functioning of human physiological systems and will be able to perform simple experiments related to it.				

Course outcomes (CO)

CO	CO statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Describe the structural and functional organization of human body	U	F&C	Short answer, Paragraph, essay type questions
CO2	Explain the mechanism of transport and exchange of respiratory gases and its control	U	F&C	Paragraph, Essay type questions
CO3	Identify and describe different components of blood and various blood groups; cardio-vascular problems	U	F	Short answer, Paragraph, essay type questions
CO4	Compare the different types of neurons; Explain mechanism of nerve impulse transmission; the ultrastructure of skeletal muscles and biochemical events and energetics involved in muscle contraction, the need of physical exercise in good physical and physiological condition	U	F&C	Short answer, Paragraph, Essay type questions

CO5	Acquire skill in estimating and enumerating blood parameters; calculating BMI, measuring the respiratory volumes, etc.	Ap	C&P	Practical lab exams, Viva- voce
CO6	Explain the mechanism of excretion and its hormonal control; enumerate common renal disorders in man.	U	F&C	Short answer, Paragraph, essay type questions
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs (45+30)
I	Introduction to human physiology :(Out of 70: 7marks)		3
	1	Introduction: Branches of human physiology, Components of body system, Human body systems and functions, vital and non vital organs.	1
	2	Physiological regulation: Levels of physiological regulation: Intracellular, local and extrinsic regulation. Homeostasis, Anthropometry, BMI and its significance	2
II	Physiology of Respiration & Circulation (22marks)		18
	3	Measures of lung volume : Vital capacity, tidal volume, residual volume etc.,	1
	4	Haemoglobin: Structure, types and functions of hemoglobin,	1
	5	Gaseous transport : Transport of oxygen and carbon dioxide in blood, factors influencing transport of gases, Oxygen dissociation curves and the factors influencing it; Carbon monoxide poisoning; Nervous and chemical control of respiration.	4
	6	Respiratory problems: in new born babies and old age, COVID associated problems, COPD, Problems and adaptations at high altitude	2
	7	Pace maker and conducting system: AV node, SA node, Purkinje fibers, Bundle of His, conduction pattern	1
	8	Components of blood and their functions: Blood cells, Plasma-Proteins & Non proteins	1
	9	Haemostasis: Biochemical pathway of Blood coagulation: Clotting factors, Disorders of blood clotting,	2
	10	Formation of Blood: Haemopoiesis; ESR, Haemoglobinopathies.	2
	11	Blood groups : Rh factor, ABO and MN; Blood transfusion and agglutination, Apherisis,	2
	12	Cardiovascular problems and Detection : Hyper and hypotension, Artherosclerosis, Bradycardia and tachycardia, Myocardial infarction, Angina pectoris, Cardiac arrest. ECG, Echo test. TMT	2