



Course Title: Animal Physiology

Course Code: BIOT204

Credit Units: 04

L	T	P/S	Lab	TOTAL CREDIT UNITS
3	-	-	2	4

Course Objectives:

Theory: The course is needed to appraise the students of the integration of functioning of living systems through an integrate amalgamation of various aspects of physiology. The vast diversity of animal kingdom is also encompass with diversity in physiology since human are epitome of ecosystem. Practical: To train students practically in basic and applied principles of Physiology.

Pre-requisites: General

Student Learning Outcomes:

At the end of this course the student will be able to

- Apprehend the normal structure and functioning of all the organ systems and their interactions for well coordinated total body function.
- Evaluate the relative contribution of each organ system to the maintenance of homeostasis.
- Understand various regulatory mechanisms and their integration.
- Acquaint with the logical consequences of dearrangement of these systems by understanding the functional abnormalities that occur in various

Course Contents/Syllabus- Theory:

	Weightage (%)
Module I Digestive system	20
Digestive System (with reference to human system) Histology and functions of gastrointestinal tract and its associated glands; Mechanical and chemical digestion of food; Role of gastrointestinal hormones; Control and action of GI Tract secretions; Absorptions of carbohydrates, lipids, proteins, water, minerals and vitamins; Disorders of the digestive system.	
Module II	20
Respiratory System (with reference to human system) Histology of trachea and lung; Pulmonary ventilation; Respiratory volumes and capacities; Transport of oxygen in the blood oxygen and hemoglobin and myoglobin dissociation curve and its influencing factors), Carbon monoxide poisoning; Carbon dioxide transport in the blood; Regulation of acid & base balance; Control of respiration	
Module III Excretory System	20
Excretory System (with reference to human system) • Histology of kidney, ureter and bladder; Renal blood supply; Mechanism and regulation of urine formation; Regulation of acid and base balance; Renal failure and dialysis.	
Module IV Blood	20
Blood Composition; Structure and functions of haemoglobin; Haemopoiesis; Haemostasis; Coagulation of blood; Disorders of blood	
Module V Heart	20
Heart (With reference to human system) An outline structure of heart; Coronary circulation; Origin and conduction of cardiac impulse; Cardiac cycle; Cardiac output and its regulation 3 Frank 3 Starling Law of the heart, Autonomic control and chemical regulation of heart rate. Blood pressure and its regulation; • Electrocardiogram.	

Pedagogy for Course Delivery:

Lectures: 39
Presentation/ Seminar: 4
Class Test: 2
Total: 45
Labs: 30

Details of Experiments:

- Estimation of haemoglobin (Sahl's method).

- Determination of specific gravity of blood
- Determination of total leukocyte count
- Determination of total erythrocyte count
- Formation of Hematin & Hemochromogen crystals
- Preparation of blood smear and identification of different WBC
- Permanent slides of various organs: Lung, Spleen, Lymph gland, Oesophagus, Stomach, Duodenum, Ileum, Large intestine Liver, Kidney, Pancreas.

Theory Assessment (L&T):

Components (Drop down)	Class Test	Home Assignment	Presentation/ Seminar	Attendance	End Term Examination
Weightage (%)	15	5	5	5	70

Lab/ Practical/ Studio Assessment:

Components (Drop down)	Continuous Assessment/Internal Assessment				End term Practical Exam	Total
	Performance	Lab record	viva	Attendance		
Weightage (%)	10	10	5	5	70	100

Text & References:

- Textbook of Medical Physiology by Guyton and Hall; 12th Edition: Saunders Elsevier, 2010. ISBN 9781416045748
- Principles of Anatomy & Physiology. XI Edition .Tortora, G.J. & Grabowski, S. (2006) John Wiley ISBN 978-0471613183
- Textbook of Physiology (Volume I and II) by Dr. A.K. Jain; 4th Edition 2010, Avichal Publishing Co. ISBN 9788177393583
- Manual of Practical Physiology for MBBS by Dr. A.K. Jain; 4th Edition 2010, Avichal Publishing Co. ISBN 9788177393583
- diFiore's Atlas of Histology with Functional Correlations .Victor P. Eroschenko; Lippincott Williams ISBN 9780781770576