Semester:	03		
Course Code:	ZOOL 21702		
Course Name:	Animal Histology and Physiology		
Credit Value:	02		
Status:	Compulsory		
Pre-requisite:	ZOOL 12703		
Co-requisite:	ZOOL 21711		
Hourly Breakdown:	Theory	Practical	Independent Learning
	30	-	70

Intended Learning Outcomes:

After the completion of this course unit, the student will be able to:

1. describe histology of mammalian organ systems with special reference to humans,
2. explain the functional significance of histological architecture of organs,
3. discuss the physiological processes with special reference to humans, and
4. appreciate the interdependency and interplay of organ systems to maintain the optimum functioning of the individual.

Course Content:

Animal Histology: Overview of histology, Histology of mammalian organ systems: integumentary, digestive, respiratory, cardiovascular, skeletal, muscular, lymphatic, urinary, nervous and reproductive system.

Animal Physiology: Homeostasis: maintaining and restoring homeostasis in animals. Respiratory gas exchange: respiratory pigments, regulation of respiration. Digestion and nutrition: regulation of gastrointestinal tract functions. Generation, conduction and transmission of electrical signals, reflex arcs. Physiology and pathways of olfaction, gustation, vision, hearing, equilibrium and somatic sensation. Muscle contraction: contraction and relaxation of skeletal muscle, muscle metabolism, control of muscle tension and body movements, smooth and cardiac muscle physiology. Cardiovascular physiology: regulation of cardiac output, capillary exchange mechanism, hemodynamics, regulation of cardiovascular system. Immunity: innate immunity with special emphasis on inteferons, complement and inflammatory response, T-cell mediated and B-cell mediated immunity, self-tolerance and defective immune system. Renal physiology: glomerular filtration, tubular reabsorption and secretion, role of counter current multipler systems in formation of dilute and concentrated urine, regulation of renal function. Hormonal regulation: mechanism of hormone action, hormonal regulation of selected body processes including reproduction.

Teaching /Learning Methods:

A combination of lectures, group activities, discussions and online resources.

Assessment Strategy:

Continuous assessment and end of semester examination. Percentage given for each sub component indicates the percent contribution to the final marks.

Continuous Assessment 30 %	Final Assessment 70 %		
Details: Quizzes 10 % Assignments 20 %	Theory 70 %	Practical -	Other -

Recommended Readings:

1. Randall, D., W. Burggre & K. French (2001). Eckert's Animal Physiology, 5th Edition, W.H. Freeman & Co. New York.
2. Tortora, G.J. & B. H. Derrickson (2016). Principles of Anatomy and Physiology, 15th edition, John Wiley & Sons, New Jersey.
3. Pawlina, W. & M. H. Ross (2020). Histology: A Text and Atlas, 8th Edition, Wolters and Kluwer Health, Philadelphia.
4. Zao P., T. Stabler., L.A. Smith, A. Lokuta & E. Griff (2020). PhysioEx 10.0: Laboratory Simulations in Physiology, 1st Edition, Pearson Education, London.