

Programme: M. Sc. (Zoology)

Course Code: ZOC-102

Title of the Course: Comparative Anatomy of Animals

Number of Credits: 3

Effective from AY: 2018-19

<u>Prerequisites for the course:</u>	Basic knowledge on animal anatomy, taxonomy and systematics is prerequisite for this course.	
<u>Objective:</u>	This course develops knowledge about fundamental anatomical principles in a wide variety of animal species through comparison of the major body systems in order to understand the adaptive changes they have undergone in the course of evolution from common ancestors, and provides first line of reasoning in determining the relatedness of species.	
<u>Content:</u>	Module 1: Skeletal system: Skeletal system of Arthropods and Echinoderms. Tetrapod limbs and their modification. Muscular system: Locomotory organs in Annelids and Molluscs; Types of Vertebrate musculature, Flight muscles of Insects and Birds.	12 hours
	Module 2: Vascular system: Vascular system in Annelida and Arthropoda. Afferent and efferent branchial system of fishes. Evolution of Portal system in Vertebrates. Respiratory system: Respiratory organs of Annelids and Molluscs, Pharyngeal basket in Lower Chordates, Tertrapod lungs.	12 hours
	Module 3: Nervous system: Nervous system in Arthropods and Molluscs; Central and autonomous nervous system in Tetrapodes. Urino-genital system: Excretory organs in Helminthes and Annelids, Reproductive organs in Arthropods. Testes, vasa deferentia, ovary and oviduct of Vertebrates.	12 hours
<u>Pedagogy:</u>	Lectures/ tutorials/assignments/self-study.	
<u>References/Readings</u>	<ol style="list-style-type: none">1. Barrington EJ, Invertebrate Structure and Function, Thomas Nelson and Sons, USA.2. Kardong K, Vertebrates: Comparative Anatomy, Function and Evolution, McGraw-Hill Companies, USA.3. Kent CG and Carr R, Comparative Anatomy of Vertebrates, McGraw-Hill Companies, USA.4. Liem KF and Franklin W, Functional Anatomy of the Vertebrates: an Evolutionary Perspective, Harcourt College Publishers, California.5. Wolff RG, Functional Chordate Anatomy, Amazon Publication, UK.6. Withers PC, Comparative Animal Physiology By, Saunders College Publishers., - Fisiologie, Vergelykend	
<u>Learning Outcomes</u>	1. Conceptualization of evolutionary changes in animal	

	<p>anatomy with respect to various systems under study.</p> <ol style="list-style-type: none"> 2. Ability to value evolutionary adaptations, benefits and mistakes in anatomical structures of animal body. 3. Critical analysis, synthesis, and evaluation of diverse sets of information concerning animal anatomy through theory and practical learning modules. 	
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