Name of the Programme: M. Sc. Zoology

Course Code: ZOO-610 **Title of the Course:** Mammalogy (Theory)

Number of Credits: 03

Effective from AY: 2023-24

Pre-requisites for the Course:	Basic knowledge on mammals and their identification at taxonomic level and the systematics Parallel enrollment for ZOO-612 Mammology (Practicals)	
Course Objectives:	1. To develop major concepts in Mammalogy, including evolution, systematics, and biogeography. 2. To review the ecological perspective and adaptation ecology. 3. To provide knowledge on field techniques to identify and study mammals. 4. To comment on keystone species and mammalian conservation	
Content:	**Module 1** Significance of study on mammals. Mammalian characteristics Evolution, systematics, Molecular technique in mammalian phylogeny Biogeography, morphology, anatomy and physiology of mammals.	15 hours
	Module 2 Foraging behaviour, Activity rhythm, communication Mammalian reproduction: an ecological perspective, mating systems, cooperative breeding, parental care Social organization, territoriality, communities, migration Adaptation: hibernation, torpor, aestivation, locomotion and water regulation of mammals; Adaptations in mammals based on habits and habitat: aquatic, desert, polar, fossorial, cursorial, arboreal, flying and gliding Echolocation in bats, biosonar in cetaceans	15 hours
	Module 3 Field techniques to study mammals, indirect methods of identifying mammals. Mammals as indicators of ecosystem, mammals as indicators of trace elements, mammalian keystone species and their	15 hours

	significance in different ecosystems Management of mammals in zoological parks, captive breeding of threatened mammals, mammalian conservation ethics	
Pedagogy:	Practical/Tutorials/Videos/Assignments/Group discussion/Self-study/ Presentations	
References/ Readings:	1. T. Clutton-Brock, Structure and function in mammalian societies. 364(1533), 3229–3242. Philosophical transactions of the Royal Society of London. Series B, Biological sciences, 2009. https://doi.org/10.1098/rstb.2009.0120 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2781877/ 2. A. F. George, F. M. Joseph, C D Lee, H. V. Stephen, Mammalogy - Adaptation, Diversity, Ecology. Johns Hopkins University Press, 2007. 3. A. F. George, Mammalogy - Adaptation, Diversity, Ecology. Johns Hopkins University Press. 2020 4. T.A. Vaughan, J.M. Ryan, N. J. Czaplewski Mammology, USA, Jones and Barlett publisher, 2011 5. Mammalian reproduction: an ecological perspective, 1985. https://pubmed.ncbi.nlm.nih.gov/3882162/ - 6. Dieter Lukas, Tim Clutton-Brock, Cooperative breeding and monogamy in mammalian societies. Royal society publishing. 2012.	
Course Outcomes:	The learner will 1. Identify mammals using direct and indirect methods. 2. Explain various aspects of mammalogy such as evolution, systematics, and biogeography. 3. Reflect on adaptations and ecology. 4. Review keystone species and mammalian conservation.	

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