

Name of the Programme: M. Sc. Zoology

Course Code: ZOO-606

Title of the Course: Herpetology (Theory)

Number of Credits: 03

Effective from AY: 2023-24

Pre-requisites for the Course:	Basic knowledge on herpetofauna its identification at taxonomic level and the systematics Parallel enrollment for ZOO-608 Herpetology (Practicals)	
Course Objectives:	1. To appraise the diversity and biology of reptiles and amphibians 2. To identify the distinguishing characters of representative herpetofauna 3. To explain the ecology and distribution of herpetofauna	
Content:	Module 1 Introduction to herpetology: shared characteristics of Amphibians and Reptiles, significance of studying Amphibians and Reptiles, the diversity of Amphibians and Reptiles. Thermal Ecology: Heat Exchange in the environment (Absorption of radiant energy, radiative loss, conduction, convection, evaporative cooling, role of body size and shape in heat exchange), Response to environmental temperatures (Basking, Perching, Breezing, Postural changes, Shade seeking and shuttling, Burrowing, Diel patterns of response to temperature), Costs and benefits of Ectothermy and Endothermy. Water relations in amphibians and reptiles, Aestivation, Hibernation and other Eco physiological adaptations in reptiles and amphibians	15 hours
	Module 2 Factors affecting distribution and abundance of amphibians and reptiles, Biogeography of Amphibians and reptiles, Communication in Amphibians and reptiles, Diet and foraging behaviour, Parental care in Amphibians and Reptiles, The Ecology and Behaviour of Amphibian Larvae, the niche (niche theory, interspecific competition, niche overlap and resource partitioning, factors influencing resource partitioning).	15 hours
	Module 3	15 hours

	Systematics and diversity of extant Amphibian & Reptiles: life history, skin, reproduction, sensory systems. Taxonomy, morphology, reproduction, life history & fossil Records (Caudata, Anura & Gymnophiona), Taxonomy, Morphology, Reproduction, Life History & Fossil Records (Squamata, Testudines, Crocodilia, Sphenodontia)	
Pedagogy:	Lectures/Tutorials/Videos/Assignments/Group discussion/Self-study/Presentations	
References/ Readings:	1. K.R. Porter, Herpetology. Philadelphia: W. B. Saunders Co., 1972. 2. K. Adler, ed., Contributions to the History of Herpetology. Society for the Study of Amphibians and Reptiles, 2007. 3. D.R. Khanna, and P.R. Yadav, Biology of Reptiles. India: Discovery Publishing Pvt. Ltd, 2004. 4. H.S. Bhamrah, and Kavita Juneja, An Introduction to Reptiles. Anmol Publications Pvt. Ltd, 2002. 5. T.S.N. Murthy, The Reptile Fauna of India. B.R. Publishing Corporation, 2010. 6. T.S.N. Murthy, A Pocket Book on Indian Reptiles Crocodiles, Testudines, Lizards and Snakes. Nature Books India, 2009. 7. J. C. Daniel, The book of Indian Reptiles and Amphibians (BNHS). Oxford, 2002. 8. R. Whitaker, and A. Captain, Snakes of India, The Field Guide. Draco Books, 2008. 9. M.A. Smith, The Fauna of British India, Ceylon and Burma, Reptilia and Amphibia, VOL III – Serpentes. Today & Tomorrow's Printers & Publishers, 1981. 10. M.A. Smith, The Fauna of British India, Ceylon and Burma, Reptilia and Amphibia, VOL II – Sauria. Ralph Curtis Books, 1973.	
Course Outcomes:	The learner will 1. Identify and classify different species of amphibians and reptiles 2. Outline the structures and functions of different amphibian and reptilian systems 3. Deduce the evolutionary history of herpetofauna based on phylogenetic analysis 4. Formulate strategies for conservation of threatened herpetofauna	