

Course Code: ZOO 335

Course Title: Herpetology

Number of Credits: 3

Effective from AY: 2020-21

Prerequisite for the Course:	Basic knowledge on herpetofauna its identification at taxonomic level and the systematics	
Objectives:	<ol style="list-style-type: none">1. Students will be introduced to the diversity and biology of amphibians and “reptiles”.2. The lecture component will have a global and diverse focus, covering topics of phylogenetics, the origin and evolution of amphibians and reptiles, the global diversity of these taxa, and their biogeography, biology, habitat ecology and conservation .	
Contents:	<p>Module 1: Introduction to herpetology; Shared Characteristics of Amphibians and Reptiles: Significance of studying Amphibians and Reptiles, The diversity of Amphibians and Reptiles, Shared Characteristics of Amphibians and Reptiles: Ectothermal, Thermoregulation and its role, Aestivation, Hibernation and other Eco physiological adaptations, Costs and benefits of Ectothermy and Endothermy, Body size and shape, Ectothermy and efficiency;</p> <p>Amphibians and Reptiles in Terrestrial Ecosystems; Factors affecting distribution and abundance of Amphibian and Reptilian fauna of the Indian subcontinent; Communication in Amphibians and reptiles.</p> <p>Module 2: Systematics and Diversity of Extant Amphibians: Life History, Skin, Reproduction, Sensory systems.</p> <p>Caudata: Salamanders; Morphology, Reproduction and Life History, Fossil Records and Phylogeny of Salamanders.</p> <p>Anura: Frogs and Toads; Skeletal Morphology, Reproduction and Life History, Fossil Records and Phylogeny of Frogs.</p> <p>Gymnophiona: Caecilian's; Morphology, Reproduction and Life History, Fossil Records and Phylogeny of Caecilian's.</p> <p>Module 3: Systematics and Diversity of Extant Reptiles: Characteristics of Reptiles; Reptile skin, Sensory system.</p> <p>Lepidosauria: Rhynchocephalia; The Tuatara, Fossil Records, Lepidosauria: General Anatomy of Squamates, Reproduction and Sex determination, Tail Anatomy, Limb reduction, Venom and Venom-delivering structures, Squamate phylogeny, Fossil records.</p> <p>Squamata: Lizards-Systematics and Phylogeny of Lizards,</p>	<p>08 hrs</p> <p>04 hrs</p> <p>03 hrs</p> <p>03 hrs</p> <p>03 hrs</p> <p>03 hrs</p> <p>02 hrs</p> <p>05 hrs</p> <p>01 hrs</p>

	<p>Squamata: Serpentes, the Snakes- Unique morphological features of snakes, Reproduction, Dentition, Fossil record, Systematics and Phylogeny of Snakes;</p> <p>Crocodylia- Fossil record, Systematics and Phylogeny of Crocodylians; Testudines: Turtles- The turtle skeleton, The turtle shell, Locomotion and reproduction, Fossil record, Systematics and Phylogeny of Turtles.</p>	<p>02 hrs</p> <p>03 hrs</p>
Pedagogy:	Lectures/ tutorials/assignments/self-study	
Learning Outcome:	<ol style="list-style-type: none"> Students will learn about the Diversity, Habitat-Ecology, Behavior, Adaptation, Taxonomy of the Amphibian and reptiles. Identification of the local herpetofauna through direct field experience. The course assumes that students are familiar with basic evolutionary theory and general biology. 	
References /Reading	<ol style="list-style-type: none"> Porter, K.R. 1972. Herpetology. W. B. Saunders Co., Philadelphia. xi, 524 pages. 80. Adler, K. (Ed.). 1989. Contributions to the History of Herpetology. K. Adler: Herpetologists of the past; J. S. Applegarth: Index of authors in taxonomic Herpetology; R. Altig: Academic lineages of doctoral degrees in herpetology. Contributions to Herpetology, No. 5, Society for the Study of Amphibians and Reptiles, Oxford, Ohio, 202 pages, 1 plate. 40. Biology of Reptiles: D.R. Khanna and P.R. Yadav, Discovery Pub, 2004, ix, 414 p, figs, ISBN An Introduction to Reptiles: H.S. Bhamrah and Kavita Juneja, Anmol, 2002, Reprint, vi, 193 p, The Reptile Fauna of India : A Source Book by T.S.N. Murthy, B.R. Pub, 2010, xx, 332 p A Pocket Book on Indian Reptiles : Crocodiles, Testudines, Lizards and Snakes, T.S.N. Murthy, Nature Books India, 2009, viii, 88 p The book of Indian Reptiles and Amphibians, By J. C. Daniel, BNHS Snakes of India, The Field Guide, by, R. Whitaker and Ashok Captain. The Fauna of British India, Ceylon and Burma, Reptilia and Amphibia, VOL III – Serpentes, By Malcom A. Smith. The Fauna of British India, Ceylon and Burma, Reptilia and Amphibia, VOL II – Sauria, By Malcom A. Smith. 	