

BASIC COURSE IN ORNITHOLOGY

MULTI FACULTY

PRE-REQUISITES : Participants should have completed at least the first year of undergraduate degree

INTENDED AUDIENCE : Undergraduate and postgraduate students in sciences. But we also welcome interested and enthusiastic members of the public.

INDUSTRIES APPLICABLE TO : Industries that will value this course include: Agriculture, Forestry, Wildlife and biodiversity conservation, Sustainability divisions of any industry.

COURSE OUTLINE :

The course intends to introduce students to the scientific study of birds (ornithology). It covers basics of a range of topics like bird anatomy, physiology, taxonomy, behaviour, conservation. It is ideal for students pursuing their Bachelors and Masters degree in life sciences and for those who want to explore ornithology as a career option. It is also useful for birdwatchers and other enthusiasts from among the larger public who wish to deepen their understanding and appreciation of birds.

ABOUT INSTRUCTOR :

Prof. Dr. Ghosh received her Masters degree in Wildlife Science from the Wildlife Institute of India in 2007 and her doctoral degree from Saurashtra University in 2013. For her doctoral research, she studied the historical and ecological correlates of breeding distribution of Himalayan leaf warbler communities. In 2017, she joined the National Centre for Biological Sciences as a NCBS-inStem-Cambridge postdoc fellow and focused on developing molecular tools to study the diet and evolutionary aspects of critically endangered Gyps vultures. She joined the Nature Conservation Foundation as the Academic Dean in September 2020. Her role includes planning, coordinating and developing the PhD and Conservation Leadership Programme at NCF.

Prof. Manjari Jain received her PhD from CES, IISc Bangalore and is currently an Associate Professor of Biology at IISER Mohali. Her research focuses on acoustic communication in animals and the drivers of signal evolution. She is passionate about teaching and communicating her science to the public, especially school children.

Prof. Jayapal is a faculty at Salim Ali Centre for Ornithology and Natural History. His main research interests include taxonomy and distribution of birds, ecology of bird communities and assemblages, and general natural history of birds. He is also the course director for the M.Sc. (Ornithology & Conservation Biology) programme at SACON.

Prof. Krishnan uses birds as a system to understand the context, function and physical principles underlying biological sound in tropical environments. Simultaneously, he also works back using sound to study basic ecological processes.

Prof. Suhel Quader is a Senior Scientist at the Nature Conservation Foundation. His training is in wildlife biology, animal behaviour and evolutionary ecology. His current interests are focussed on participatory science and in techniques and problems in data science. In addition, he works on public communication and education about birds and nature.

Prof. Robin is an evolutionary ecologist hugely motivated by the natural history of birds, especially those on the Shola Sky Islands of the Western Ghats. Several of these species are endemic and endangered and he uses a variety of tools including acoustics, genetics, and remote sensing images to explore different aspects of the ecology of these species. More about his research and his team is at www.skyisland.in.

Prof. Umesh Srinivasan is based at the Centre for Ecological Sciences at the Indian Institute of Science. Umesh studies how climate change and forest degradation affect the population dynamics of forest birds in the Eastern Himalayas of Arunachal Pradesh, and is also involved in a community-based conservation project to protect the critically endangered Bugun liocichla.

COURSE PLAN :

Week 1: Introduction to Ornithology; Avian Diversity and Classification; Evolution and Speciation

Week 2: Anatomy and Morphology; Physiology; Coloration

Week 3: Life History; Foraging Behaviour; Mating and Breeding Behaviour

Week 4: Social Behaviour; Methods of Science and Posing Research Questions

Week 5: Vocal Behaviour: Mechanisms; Ecology & Evolution; Vocal Behaviour: Case Study

Week 6: Migration; Basics of Research Design

Week 7: Bird Populations: Concepts; Bird Communities: Concepts

Week 8: Mixed species flocks; Studying Bird Populations and Communities: Techniques

Week 9: Avian Disease; Introduction to data visualisation and analysis

Week 10: Biogeography; Macroecology; Macroecology: Case Study

Week 11: Avian Conservation: Concepts; Avian Conservation: Case Studies 1; Avian Conservation
Case Studies 2

Week 12: Citizen Science in Ornithology; Molecular Techniques in Ornithology; Molecular
Techniques Case Study