

Course Code	Course Title	C	H	I	E	T
17U5ZMC6	Biodiversity and Conservation Biology	5	5	25	75	100

Objectives

- ❖ To learn the basic principles and study techniques of Biodiversity.
- ❖ To study methods of biodiversity conservation and learn about organizations associated with Biodiversity and conservation.
- ❖ To get an exposure on health evaluation of wild animals.

Learning Outcome

1. Acquire basic knowledge on principles and methods of biodiversity conservation.
2. Motivation for taking up research in biodiversity studies.

Unit- I

Biodiversity: Definitions, Levels of biodiversity, Values and significance of biodiversity, Biogeographical zones of India, Global biodiversity, biological diversity at National level, Hotspots of biodiversity, Ecosystem diversity in India, Threats to biodiversity, Endemic and endangered species in India.

Unit- II

Techniques for Biodiversity studies: Sampling techniques for Invertebrates (light traps, pitfall traps, sweep netting, bait traps (aerial attractant traps), Birds (point counts, line transects), Mammals (trapping, dung counting, signs of feeding and foot prints). Radio telemetry, Remote sensing. Diversity indices – Shannon index, Simpson's index, Morisita Horn Index and Jaccard index (including calculations)

Unit- III

Health condition evaluation of wild animals: Chemical immobilization of wild animals, Physical examination of animal in hand, examination of dead animals. Diseases of wild animals in India (Rinderpest, Foot and mouth disease, diseases among non-primates). Case studies for human dimensions in wildlife management and development in Periyar Tiger Reserve, Gujar and the Chilla Wildlife Sanctuary (Problem, analysis, solutions and results).

Unit- IV

Conservation of Biodiversity: *In situ* conservation – National parks, wildlife sanctuaries and biosphere reserves. *Ex situ* conservation – Gene banks, cryopreservation and captive breeding. Legal aspects: The Indian Forest Act, 1927; Wildlife (protection) Act, 1972; Biological Diversity Act, 2002, CITES, Red Data Book.

Unit- V

Organizations associated with Biodiversity and conservation: IUCN, UNEP, WCMC, WWF. Ministry of Environment and Forest and Climate change, National Biodiversity Authority, ZSI, CES-IISc, SACON, IFGTB, ICAR, WII, and ICFRE.

Text Books

1. Krishnamurthy, K.V. 2003, An advanced Textbook on Biodiversity Principles and Practice, Oxford & IBH publishing Co. Pvt. Ltd, New Delhi.
2. Kumar, V. and M.J. Asija. 2005, Biodiversity Principles and Conservation, Student Edition, Jodhpur.
3. Berwick, S.H. and V.B. Saharaia. 1995, Wildlife Research and Management, Oxford University Press, New Delhi.
4. Sutherland, W.J. 1997, Ecology Census Techniques A Hand book, Cambridge University Press, New Delhi.

References Books

1. Rodgers, W.A. 1991, Techniques for Wildlife census in India A Field Manual, Wildlife Institute of India, Dehradun.
2. Odum, E.P. 1971, Ecology, Amerind Publishing Co. Pvt. Ltd, New Delhi.
3. Benton, A.H. and W.E. Werner. 1980, Field Biology and Ecology, Tata Mc Graw Hill Publishing Company Ltd, New Delhi.
4. Seshadri, B. 1969, The twilight of India's Wildlife, John Baker Publishers. London.