Course Code	Course Name	Credits
26ZY954	AI TOOLS IN ANIMAL DIVERSITY	04

Course Objectives

- To understand AI applications in animal diversity studies.
- To study digital tools for biodiversity assessment.
- To develop knowledge on species identification technologies.
- To understand AI-based ecological analysis.
- To enhance awareness on biodiversity conservation.

Learning Outcomes

- Explain AI applications in biodiversity studies.
- Identify digital tools used in animal diversity analysis.
- Demonstrate AI-based species identification methods.
- Analyze ecological and biodiversity data.
- Apply AI technologies in conservation biology.

Unit 1 - Introduction to AI in Biodiversity (12 Hrs.)

Concept and scope of AI; biodiversity databases and digital tools.

Unit 2 - Species Identification Technologies (12 Hrs.)

Image processing; machine learning; automated taxonomy systems.

Unit 3 - Ecological Data Analysis (12 Hrs.)

GIS and remote sensing; habitat mapping; biodiversity analytics.

Unit 4 - AI in Wildlife Monitoring (12 Hrs.)

Camera traps; drones and GPS tracking; predictive ecological models.

Unit 5 - Conservation and Future Prospects (12 Hrs.)

AI-based conservation planning; ethical issues; future trends in biodiversity research.

Reference Books:

1. Jeffery, K. (2022). Artificial Intelligence for Conservation. Springer.
2. Primack, R.B. (2020). Conservation Biology. Sinauer Associates.
3. Eastman, J.R. (2019). GIS Applications. Clark Labs.
4. Mishra, P. (2023). AI in Biological Sciences. Elsevier.
5. Hunter, M.L. (2018). Fundamentals of Conservation Biology. Wiley.

Websites and eLearning Sources:

1. https://www.iucn.org/
2. https://www.unep.org/
3. https://www.worldwildlife.org/