Course Code	Course Name	Credits
26ZY107	AI IN WILDLIFE CONSERVATION	04

Course Objectives

- To understand the applications of artificial intelligence in wildlife conservation.
- To study AI tools used in biodiversity monitoring and habitat analysis.
- To develop knowledge on remote sensing and wildlife tracking technologies.
- To understand conservation planning using AI and big data.
- To enhance awareness on technological innovations in wildlife protection.

Learning Outcomes

- Explain the role of AI in wildlife conservation.
- Identify AI tools used in biodiversity assessment.
- Demonstrate knowledge of wildlife monitoring technologies.
- Analyze conservation data using AI applications.
- Apply AI-based strategies for wildlife protection and management.

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

Concept and scope of AI; applications of AI in biodiversity conservation; digital conservation technologies; role of big data in wildlife management.

Unit 2 - Wildlife Monitoring Technologies (12 Hrs.)

Camera traps, drones and GPS tracking; remote sensing in wildlife studies; acoustic monitoring; image recognition and automated species identification.

Unit 3 - Habitat Analysis and Data Analytics (12 Hrs.)

Habitat mapping using GIS and AI; predictive modelling of species distribution; data analytics in conservation biology; climate change and habitat loss assessment.

Unit 4 - AI-Based Conservation Strategies (12 Hrs.)

AI in anti-poaching systems; conservation planning and management; wildlife corridor analysis; population estimation using machine learning.

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

Ethical issues in AI-based conservation; limitations and challenges; community participation in conservation; sustainable wildlife management; future trends in conservation technology.

Reference Books:

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

Websites and eLearning Sources:

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