

Course Code	Course Name	Credits
26AE106	ENVIRONMENTAL STUDIES	02

Course Objectives

- Provide knowledge on the basic environmental and ecological principles of the natural world
- Understand various ecosystems including the land, water, sea, and atmosphere, and how these function collectively to support life on Earth
- Understand the impacts of human society on Earth's systems and resources
- Understand governmental environmental policies in defining and regulating the impacts of human society on earth.

Learning Outcomes

Upon successful completion of this course it is intended that a student will be able to:

- Identify the major ecosystems and the components of different types of ecosystems
- Compare and contrast the characteristics of different types of ecosystems
- Identify the major causes of environmental problems
- Explicate the ecological interconnectedness of life on earth

Unit 1 - Multidisciplinary nature of Environmental Studies (09 Hrs.)

Scopes and importance of environmental science. Role of natural resources such as forest, water, energy and land resources in sustaining and supporting life on earth.

Unit 2 – Biosphere and ecosystem (09 Hrs.)

Different aquatic and terrestrial ecosystems - forest, grassland, desert and aquatic- with regard to energy flow, food chain, food webs and ecological pyramids.

Unit 3 – Biodiversity and its conservation (09 Hrs.)

Genetic, species and ecosystem diversity; values of biodiversity and threats to biodiversity. Red data book; Various conservation strategies of biodiversity in India- in-situ and ex-situ. Role on NGOs in Biodiversity conservation.

Unit 4 – Influence of human activities on biosphere (09 Hrs.)

Definitions, cause, effects and control of air, noise, water and soil pollutions. Strategies to manage various environmental disasters- Greenhouse effect and global warming. Adverse effects of climatic conditions- Acid rain, Ozone layer depletion.

Unit 5 – Social management of the environment (09 Hrs.)

Major environmental laws in free India, various government strategies, policies and action plans in relation to conservation, sustainable development.

Reference Books:

1. Aganval, K. C. (2001). Environmental biology. Nidi Publications Limited.
2. Dash, M. C. (1993). Fundamentals of ecology. Tata McGraw-Hill.
3. Molles, M. C., Jr. (2019). Ecology: Concepts and applications. Tata McGraw-Hill.
4. Stiling, P. (2012). Ecology: Global insights and investigations. McGraw-Hill.
5. Oliver, S. O., & Daniel, D. C. (1995). Natural resource conservation for a sustainable future. Prentice Hall.