

Sem.	Course Code	FOUNDATION COURSE I - ENVIRONMENTAL STUDIES	Total Marks: 50		Hours Per Week	Credits
I	17ES01			CIA: -	ESE: 50	2

Objectives

- To identify the major challenges in environmental issues and evaluate possible solutions.
- Develop analytical skills, critical thinking and demonstrate socio-economic skills for sustainable development.
- To analyze an overall impact of specific issues and develop environmental management plan.

Course Outcome:

At the end of the course the students will be able to

- CO1 - Understand the different types of ecosystems (Understand).
 CO2 - Identify the different types of land and energy resources (Remember).
 CO3 - Acquire the concepts of biodiversity and its conservation (Apply).
 CO4 - Develop awareness against disaster management (Create).
 CO5 - Attain exposure to environmental policies (Apply).

UNIT I - Ecosystems

Ecosystems: Meaning - Structure and function of Ecosystem; Types of Ecosystem; Structure and function of the following Ecosystem: (a) Forest Ecosystem (b) Grassland Ecosystem (c) Desert Ecosystem (d) Aquatic Ecosystems; Energy flow in an Ecosystem: Food Chains, Food Webs and Ecological Pyramids. Need for a Balanced Ecosystem and Restoration of degraded Ecosystem

UNIT II - Natural Resources: Renewable and Non-renewable Resources

Land Resources and land use change; Land degradation, Soil erosion and desertification.

Deforestation: Causes and impacts due to mining, Dam building on Environment, Biodiversity and Tribal Populations.

Water: Use and over-exploitation of surface and ground water, Floods, Droughts, Rain water Harvesting.

Energy Resources: Renewable and Non Renewable Energy Sources, Use of Alternate Energy Sources, growing energy needs.

UNIT III - Biodiversity and Conservation:

Levels of Biological Diversity: Genetic, Species and Ecosystem diversity; Biogeographic zones of India; Biodiversity hot spots.

India as a Mega-Biodiversity Nation; Endangered and Endemic species of India.

Threats to biodiversity: Habitat loss, Poaching of Wildlife, Man - Wildlife conflicts, Biological invasions; Conservation of Biodiversity: In-situ and Ex-situ conservation of biodiversity.

UNIT IV - Disaster Management & Environmental Pollution

Disaster: Types – Natural and Manmade; Earthquakes, Volcanic eruption, Landslides, Flood, Drought, Fire, Nuclear and Chemical Disasters.

Disaster Management: Floods, Earthquake, Cyclones and Landslides.

Causes, Effects and Control measures of: (a) Air Pollution (b) Water Pollution (c) Soil Pollution (d) Noise Pollution (e) Thermal Pollution (f) Radioactive Pollution.

Solid Waste Management, E - Waste Management - Sources, Characteristics & Disposal methods

UNIT V - Environmental Policies & Practices

Climate Change, Global Warming, Ozone layer depletion, Acid Rain and Impacts on Human Communities and Agriculture.

Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water(Prevention & control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act.

International Agreements: Montreal and Kyoto.

Public Awareness Campaign: Clean India Movement – Swachh Bharat Abhiyan.

Suggested Readings:

1. Environmental Studies (for Non-Engineering Students) by Prof. B.Sudhakara Reddy, Prof. T.Shivaji Rao, Prof. U.Tataji and Prof. K.Purushotham Reddy, published by Maruthi Publications, Guntur. (Prescribed by APSCHE).
2. Environmental Studies by Dr.M.Satyanarayana, Dr.M.V.R.K.Narasimhacharyulu, Dr.G.Rambabu and Dr.V.Viveka Vardhani, Published by Telugu Academy, Hyderabad.
3. Environmental Studies by R.C.Sharma, Gurbir Sangha, published by Kalyani Publishers.
4. Environmental Studies by Purnima Smarath, published by Kalyani Publishers.
5. Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.
6. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.
7. Benny Joseph (2005), “Environmental Studies”, Tata McGraw – Hill Publishing Company Limited.
8. R.J.Ranjit Daniels and Jagadish Krishnaswamy, (2009), “Environmental Studies”, Wiley India Private Ltd., New Delhi.
9. S.M. Prakash, “Environmental Studies”, Elite Publishers Mangalore, 2007.
10. Erach Bharucha, “Text Book of Environmental Studies”, for UGC, University press, 2005.
11. Dr.Pratiba Sing, Dr.AnoopSingh and Dr.Piyush Malaviya, “Text Book of Environmental and Ecology”, Acme Learning Pvt. Ltd. New Delhi.
12. Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.

QUESTION PAPER PATTERN
SECTION - A
(5 X 10 = 50 Marks) (Either or choice)
Two questions from each unit