

## ENVIRONMENTAL STUDIES

Lectures / Tutorials : 4 Periods/Week

Sessional marks: 40

Semester End Exam. : 3 Hours

Semester End Exam. marks: 60

Credits : 4

### Course Objectives

- To create an awareness on the various environmental pollution aspects and issues.
- To give a comprehensive insight into natural resources, ecosystem and biodiversity.
- To educate the ways and means to protect the environment from various types of pollution.
- To impart some fundamental knowledge on human welfare measures and environmental acts.
- Demonstrate the environmental problems like global warming, Ozone layer depletion and acid rains.

### Course Outcomes

Student will be able to

- Define and explain the basic issues concerning the ability of the human community to interact in a sustainable way with the environment.
- Describe and discuss the environmental implications of the cycles of biologically important materials through the ecosystem.
- Explain why the size of the human population presents an environmental problem. Discuss the factors for the rise of population worldwide.
- Discuss the benefits of sustaining each of the following types of resources; food, health, habitats, energy, water, air, soil and minerals
- Understand the causes, effects and controlling measures of different types of environmental pollutions with some case studies.
- Demonstrate environmental problems like global warming, ozone layer depletion and acid rains

## UNIT-I

### Introduction:

Definition, Scope and Importance.

### Natural Resources:

Forest Resources – Use and over-exploitation, Deforestation, Mining, dams and their effects on forests and tribal people; Water Resources – Use and over-utilization of surface and ground water, floods and droughts, Water logging and salinity, Dams – benefits and problems, Conflicts over water; Energy resources – Energy needs, Renewable and non-renewable energy sources;

Land resources – Land as a resource, land degradation, soil erosion & desertification, effects of modern agriculture on land resources.

### Ecosystems:

Definition, Structure and functions of an Ecosystems, Biogeochemical cycles-water, carbon, nitrogen and water cycles, Types-Forest, Greenland, Desert, Aquatic ecosystem.

## UNIT-II

**Biodiversity and its Conservation:**

Definition, Value of biodiversity. Bio-geographical classification of India, India as a mega-diversity nation, Hot-spots of biodiversity, Threats to bio-diversity, Endemic and endangered species of India, Conservation of biodiversity.

**.Environmental Pollution:**

Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, nuclear pollution, Solid waste management.

**UNIT-III****Social Issues and Environment:**

From unsustainable to sustainable development, Population growth and environment, Green revolution, Rain water harvesting, watershed management, cloud seeding, Resettlement and rehabilitation of people - problems and concerns, Environmental Impact Assessment.

**Climate Changes:**

Global warming & Green house effect, Acid rain, Ozone layer depletion.

**UNIT-IV****Environmental acts:**

Prevention and Control of Water pollution & Air Pollution act, Environmental protection act, Wildlife protection act, Forest Conservation act.

**International Conventions:**

Stockholm Conference 1972, Earth Summit 1992. Copenhagen Summit 2009.

**Case Studies:**

Chipko movement, Narmada Bachao Andolan, Silent Valley Project, Madhura Refinery and Taj Mahal, Chernobyl Nuclear Disaster, Ralegaon Siddhi, Florosis and Bhopal Tragedy.

**Field work:**

Visit to a local area to document environmental assets – river/ forest/ grassland / hill / mountain. Study of local environment-common plants, insects, birds. Study of simple ecosystems – pond, river, hill, slopes etc. Visits to industries, water treatment plants, and effluent treatment plants.

**NOTE:**

*Two questions of 12 marks each will be given from each unit out of which one is to be answered. Twelve questions of one mark each will be given from entire syllabus which is a compulsory question.*

**TEXT BOOKS**

1. Environmental Studies, by Dr. Suresh K. Dhameja, Published by S.K. Kataria & Sons, 2010.

**REFERENCE BOOKS**

1. Environmental studies by Anubha Kaushik and C.P.Kaushik., New Age International Publishers, 2008.
2. T Benny Joseph, Environmental Studies, the Tata McGraw-Hill,2008.

