

Course Code: BMD-200

Course Title: Environmental Studies

Core/Elective: Elective (Multidisciplinary Course)

Credits: 3

Course Description

The course “Environmental Studies” is divided into 8 Units. These are as follows.

Unit 1: The Multidisciplinary Nature of Environmental Studies

Definition, scope, and importance
Need for public awareness

Unit 2: Natural Resources

Renewable and Non-Renewable Resources:

Natural resources and associated problems

- a. Forest resources: use and over-exploitation, deforestation, case studies; timber extraction, mining; and dams and their effects on forests and tribal people
- b. Water resources: use and over-utilization of surface and ground water; floods, drought, conflicts over water, and benefits and problems of dams
- c. Mineral resources: use and exploitation, environmental effects of extracting and using mineral resources, and case studies
- d. Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, and case studies
- e. Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternative energy sources, and case studies
- f. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion, and desertification.

Unit 3: Ecosystems

Concept of an ecosystem
Structure and function of an ecosystem
Producers, consumers and decomposers

Energy flow in the ecosystem

Ecological succession

Food chains, food webs and ecological pyramids

Introduction, types, characteristic features, structure and function of the following ecosystem:-

Forest ecosystem

Grassland ecosystem

Desert ecosystem
Aquatic ecosystems (ponds, lakes,
rivers, oceans, estuaries)

Unit 4: Biodiversity and Its Conservation

Introduction – Definition: genetic, species and ecosystem diversity
Biogeographical classification of India
Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic, and
option values
Biodiversity at global, national, and local levels
India as a mega-diversity nation
Hot-spots of biodiversity
Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts
Endangered and endemic species of India
Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

Unit 5: Environmental Pollution

Definition

Causes, effects and control measures of:

Air pollution
Water pollution
Soil pollution
Marine pollution
Noise pollution
Thermal pollution
Nuclear hazards

Solid waste Management: Causes, effects, and control measure of urban and industrial wastes

Role of an individual in prevention of pollution.

Pollution case studies.

Disaster management: floods, earthquake, cyclone and landslides.

Unit 6: Social Issues and the Environment

From Unsustainable to sustainable development

Urban problems related to energy

Water conservation. Rain water harvesting. Watershed management

Resettlement and rehabilitation of people: its problems and concerns. Case studies

Environmental ethics: Issues and possible solutions

Climate change; global warming; acid rain; ozone layer depletion; nuclear accidents and holocaust; case studies

Wasteland reclamation
Consumerism and waste products
Environment Protection Act
Air (Prevention and Control of Pollution) Act
Water (Prevention and control of Pollution) Act
Wildlife Protection Act
Forest Conservation Act
Issues involved in enforcement of environmental legislation
Public awareness

Unit 7: Human Population and the Environment

Population growth
Population explosion – family welfare programme
Environment and human health
Human rights
Value education
HIV/AIDS
Women and child welfare
Role of information technology in environment and human health
Case studies

Unit 8: Field Work

Visit a local area to document environmental assets –river/
forest/grassland/hill/mountain
Visit to local polluted site – Urban/Rural/Industrial/Agricultural
Study of common plants, insects, birds
Study of simple ecosystems-pond, river, hill slopes, etc.

Course Outcomes

Students will be able to:

1. understand the importance of environment, the nature of environmental hazards, and ways to deal with them;
2. gain knowledge of ecosystems and biodiversity and their contemporary significance;
3. appreciate the relation between the environment, human population, and social issues;
4. reflect on the exhaustibility of natural resources and ways of conserving them from a long-term perspective; and
4. understand the multifaceted effects of development and devise contextually relevant strategies for sustainable development.

Evaluation Scheme

Internal (40 marks): the pattern is: 1. internal assessment test (20 Marks) 2. assignment (20 Marks) 3. seminar presentation by students (20 Marks). Out of these, the best two will be considered.

External (60 marks): semester-end examination